ORDER NO. MD9803067C2

Service Manual

Portable Stereo CD System

Radio Cassette

RX-DS18

COMPACT disc DIGITAL AUDIO

MASH* multi-stage noise shaping

Colour
(K) ····· Black Type

Areas
E ····· Europe. and Russia.
EB ····· Great Britain.
EG ····· Europe.

TAPE SECTION: SG20 MECHANISM SERIES
CD SECTION : RAE0152Z TRAVERSE DECK SERIES

* MASH is a trademark of NTT.

■ Specifications

■ Radio

Frequency range
FM: 87.50 – 108.00 MHz (50 kHz steps)
AM: 522 – 1629 MHz (9 kHz steps)
Intermediate frequency
FM: 10.7 MHz
AM: 459 kHz
Sensitivity
FM: 7.1 μV/0.5mW output (Max.)
AM: 100 μV/m/0.5mW output (Max.)

■ CD player

Sampling frequency: 44.1 kHz
Decoding: 16 bit linear
Beam source: Semiconductor laser (wavelength 780 nm)
No. of channels: 2 channel, stereo
Wow and flutter: Less than possible measurement data
D/A converter: MASH (1 bit DAC)

■ Tape recorder

Track system: 4 track, 2 channel, stereo
Monitor system: Variable sound monitor
Recording system: AC bias (100 kHz)
Erasing system: Multi Pole magnet
Frequency range Normal position: 60 – 14,000 Hz

■ General

Speakers: 10 cm 6 Ω × 2
Jacks
Output: PHONES: 3.5 mm stereo (16 – 32 Ω)
Power requirement
AC: 230 – 240 V, 50 Hz
Power consumption: 16 W
Battery: 12 V (Eight R20/LR20, D, UM-1 batteries)
• Do not use rechargeable type batteries.
Memory back-up for computer:
6V (Four R6/LR6, AA, UM-3 batteries)
• Do not use rechargeable type batteries.
Dimensions (W × H × D): 500 × 146 × 263 mm
Weight: 3.4 kg without batteries

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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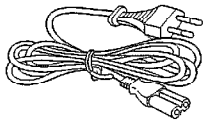
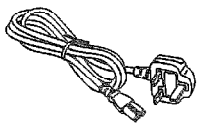
Accessories

- AC power cord ..... 1 pc.
  (RJA0019-2K) [E, EG areas] (VJA0733) [EB area]





- Remote control transmitter (EUR646550) ..... 1 pc.

CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Precaution of Laser Diode

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.
Wave length: 780 nm
Maximum output radiation power from pick up: 100 µW/VDE

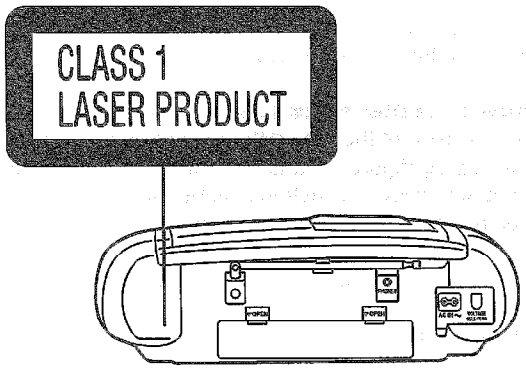
Laser radiation from the pick up unit is safety level, but be sure the followings:

1. Do not disassemble the pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit adgestrahit.
Wellenlänge: 780 nm
Maximale strahlungsleistung der laserinhelt: 100 µW/VDE

Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefähriich ist.
2. Den werksseitig justierten einstellregler der lasereinreit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.



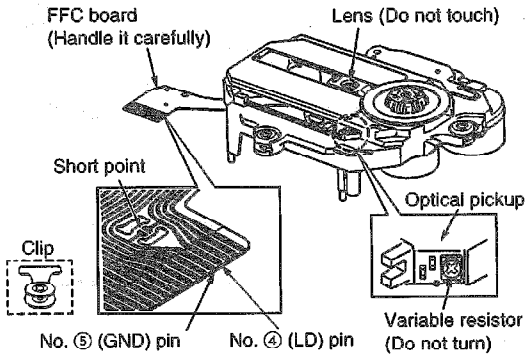
DANGER	INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.	(Inside of product)
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	(Indersiden af apparatet)
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.	(Tuotteen sisällä)
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.	(Apparatens insida)
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.	(Produktets innside)
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.	(Im Inneren des Gerätes)

■ Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

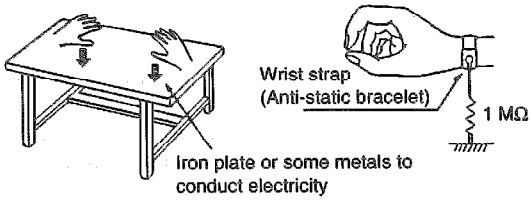
● Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To protect the laser diode against electrostatic breakdown, short the flexible board (FFC board) with a clip or similar object.
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.



● Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conducive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.



Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).

Caution when Replacing the Traverse Deck:

The traverse deck has a short point shorted with solder to protect the laser diode against electrostatic breakdown. Be sure to remove the solder from the short point before making connections.

■ Caution for AC Main Lead

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFETY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF–KEEP DRY.

Before use

Removal the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

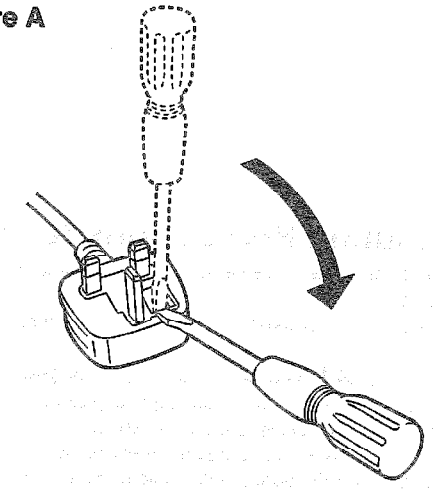
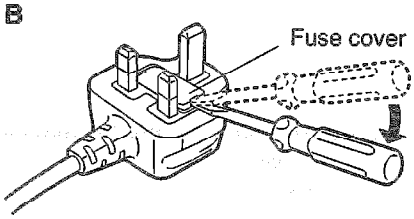


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

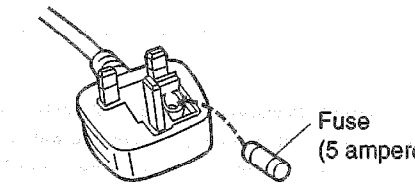
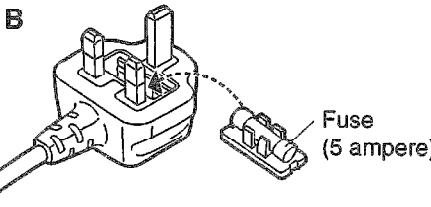
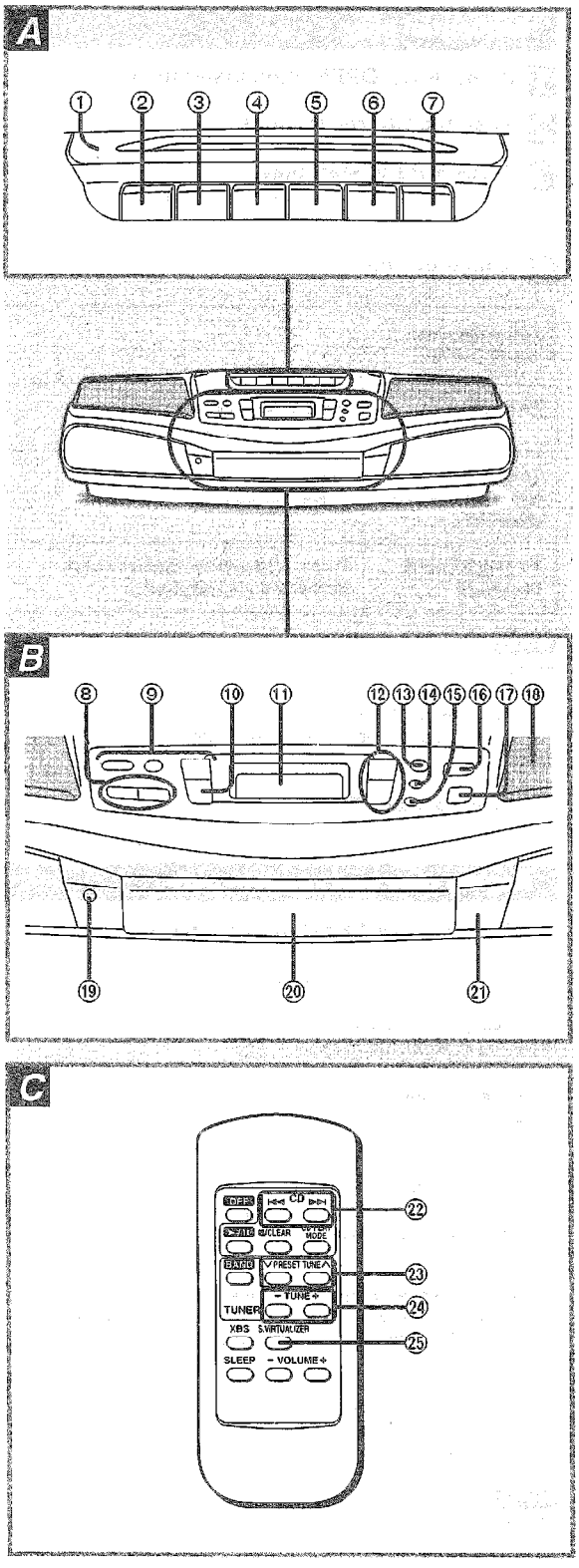


Figure B



Location of Controls



Main unit

A

Number	Designation

① Deck (Recording/playback)
② Recording button (● REC)
③ Playback button (▶ PLAY)
④ Rewind/review button (◀◀ REW/REV)
⑤ Fast forward/cue button (▶▶ FF/CUE)
⑥ Stop/eject button (■/⏏ STOP/EJECT)
⑦ Pause button (❚❚ PAUSE)

B

⑧ Tuning/CD skip, search buttons (TUNE/SKIP/SEARCH −/|◀◀, +/▶▶|)
⑨ Function select buttons
- Tape/power standby button (TAPE/OFF)
  Press to switch the unit from on to standby mode or vice versa. In standby mode (refer to ⑲), the unit is still consuming a small amount of power.
- Tuner/band button (BAND)
- CD play/pause button (▶/❚❚)

⑩ CD stop/program clear, tuning mode select button (■ CLEAR/TUNE MODE)
⑪ Display panel
⑫ Volume control buttons (VOLUME +, −)
⑬ Sleep timer button (SLEEP)
⑭ CD program, tuner preset button (MEMORY)
⑮ Stereo/monaural, beat proof button (FM MODE/BP)
CD play mode select button (CD PLAY MODE)
⑯ XBS button (XBS)
⑰ Remote control signal sensor (SENSOR)
⑱ Speakers
⑲ Power/standby/battery indicator (PWR/BATT ⏻/I)
The indicator lights green when the unit is turned on.
When the AC power supply is used, it functions as an AC connection indicator. (The indicator colour changes to red when the unit is turned off.)
When the unit is operated on batteries, it functions as a battery check indicator.
⑳ CD tray
㉑ CD tray open button (⏏ CD OPEN)

Remote control

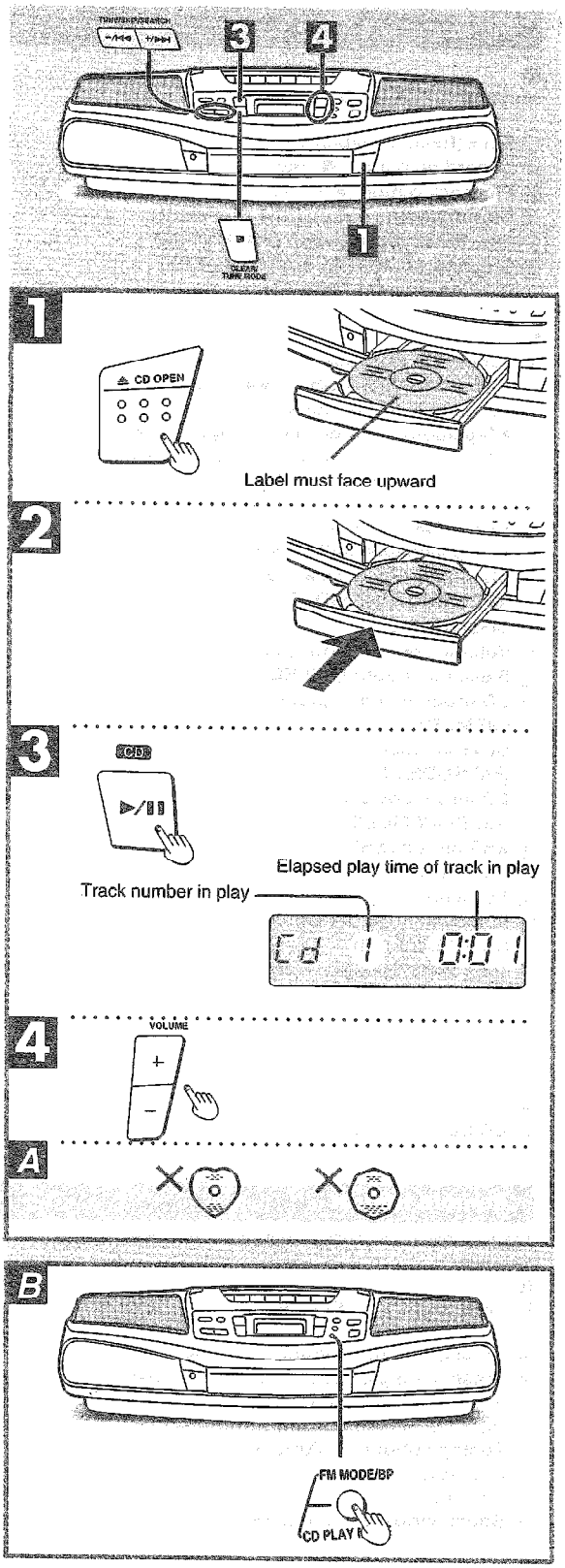
The functions of the buttons without numbers are same as on the main unit.

C

Number	Designation

㉒ CD skip, search buttons (|◀◀, ▶▶|)
㉓ Preset tuning buttons (∨ PRESET TUNE ∧)
Press to select the preset channel when presetting radio broadcasts and in preset tuning.
㉔ Tuning buttons (− TUNE +)
Press to tune in the station when presetting radio broadcasts and in manual tuning.
㉕ Sound virtualizer button (S. VIRTUALIZER)

Listening to CDs



Sequential play

1 Press ≜ CD OPEN, then insert the CD.

2 Push the CD tray to close it.

3 Press ▶/❚❚ to start play.
Play starts from the first track and continues to the last track, after which it automatically stops.

4 Adjust the volume.

To stop the disc:
Press ■ CLEAR.

To Pause	Press ▶/❚❚ during playback. To resume playback, press ▶/❚❚.
To search forward/backward (Search)	Hold down –/⏮ (backward) or +/⏭ (forward) during playback.
To skip forward/ backward	Press –/⏮ (backward) or +/⏭ (forward) during playback.

Notes

- If interference occurs to radios or televisions, place the unit as far as possible from this equipment.
- Do not press ≜ CD OPEN during play, pause or immediately after when you inserted the CD and closed the CD tray. CD may be scratched.

To prevent damage A
Do not use irregular shape CDs (heart-shape, octagonal, etc.).

Repeat play and random play

Press CD PLAY MODE before or during play. B
Every time you press the button;

→ 1-🔁 → 🔁 → RANDOM → (OFF) →

To repeat just one track:
Press CD PLAY MODE to select "1-🔁".

To repeat all tracks:
Press CD PLAY MODE to select "🔁".

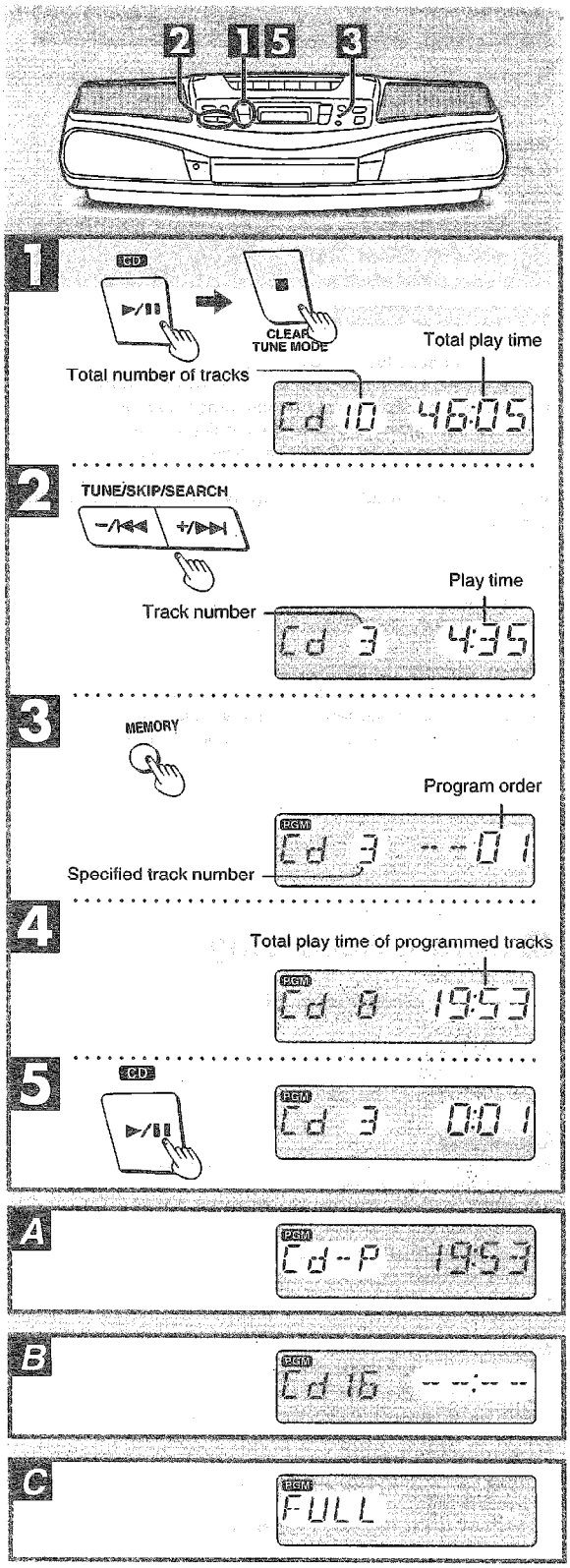
To start random play:
Press CD PLAY MODE to select "RANDOM".
All tracks on the loaded CD will be played in random order. Playback will stop automatically when all tracks have been played.

To cancel repeat play and random play:
Press CD PLAY MODE to clear "1-🔁", "🔁" and "RANDOM".
Pressing ≜ CD OPEN also cancels repeat play and random play.

To repeat programmed tracks:
1. Program desired tracks (step 1 to 4 on page 7).
2. Press CD PLAY MODE to display "🔁".
3. Press ▶/❚❚ to begin play.

Notes

- During random play, you cannot skip to tracks which have already been played.
- During random play, you can search forward or backward only within the current track.
- Random play cannot be used in combination with program play.



Program play

You can program up to 24 tracks.

Before operation:
Program play cannot be used in combination with random play.
When RANDOM is displayed, press CD PLAY MODE to clear the display.

1 Press ▶/II, then press ■ CLEAR after the track number has been displayed.
The total number of tracks and total play time of the CD are displayed.

2 Press −/|◀◀ or +/▶▶| to select the desired track.

3 Press MEMORY.
"PGM" is displayed.

4 Repeat steps 2 through 3 until you have programmed all the tracks you want.

5 Press ▶/II.
Play will start in the programmed sequence.

When all programmed tracks have been played "Cd--P" and the total play time will be displayed. A

To cancel program play:
Press ■ CLEAR in stop mode to display "CLR".
Pressing ⏏ CD OPEN will cancel program play.

When "--:--" appears: B
This means that the total play time of the programmed tracks has exceeded 120 minutes. Tracks can still be programmed and played.

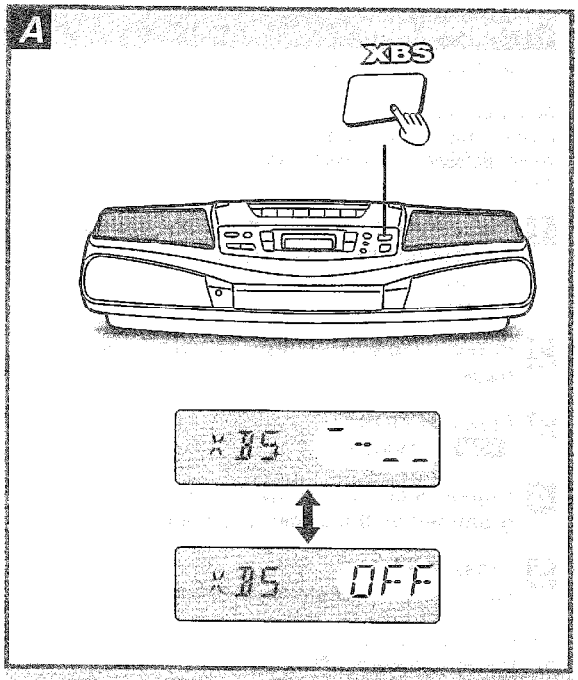
When "FULL" appears: C
The number of programmed tracks is limited to 24. No further tracks can be programmed.

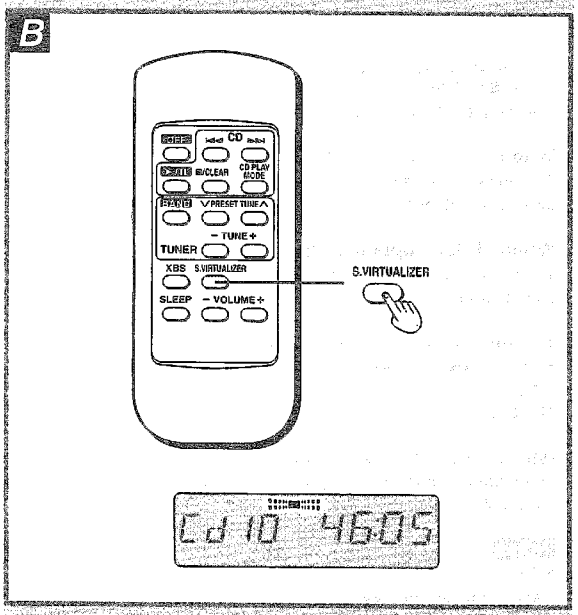
To check what has been programmed:
Press −/|◀◀ or +/▶▶| when "Cd--P" is displayed at the end of the program.
The display will show the track number and programmed sequence.

Memory retention of programmed tracks:
The memory retains the program even if play is stopped or the unit is turned off.

Notes
- During program play, you can search forward or backward only within the current track.
- During program play, skipping is always in the programmed order, whether forward or backward.

Changing the Sound Quality





Leader tape (Recording cannot be made.)
Cinta guía (No puede grabarse.)
Inledningsband (På denna del kan inspelning inte utföras.)

Adjusting the deep-bass (XBS) A

When the XBS level control is adjusted, the level of the dynamic low frequency sound range is boosted.

Press XBS.
Every time you press the button; XBS⟷XBS OFF

Using the "live" effect (Sound Virtualizer) B

by remote control only

The "live" effect allows enjoyment of the 3-D feeling of listening to live music. Compared with earlier surround sound systems, the sound virtualizer leaves middle-range sounds such as vocals clear and gives natural width and depth to music.
Sound virtualizer is only effective with stereo sound.

Press S.VIRTUALIZER to display the sound virtualizer indicator.

To cancel:
Press S.VIRTUALIZER to clear the sound virtualizer indicator.

- **When listening through headphones**
  The effect is less discernable than through the unit speakers.
- **When excessive interference in FM stereo reception occurs**
  If interference increases, cancel the sound virtualizer effect.

Before Recording

To take up the leader tape: C

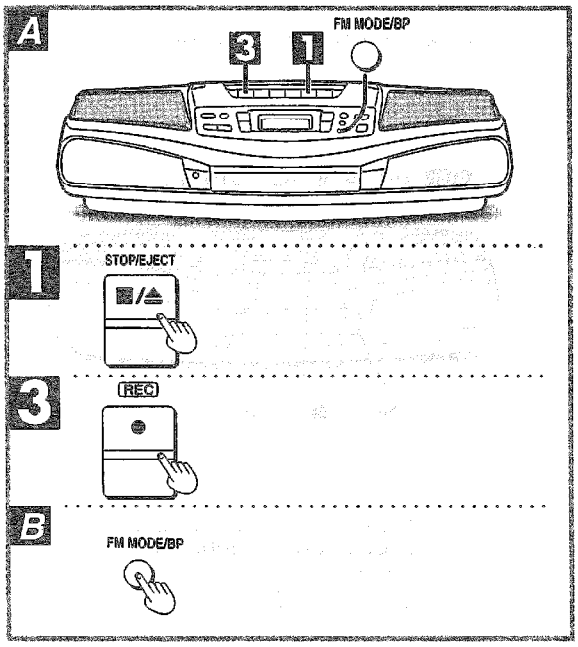
Only normal tapes can be used.
The sound may not be recorded properly if high position tapes and metal position tapes are used with this unit.

References
- Any changes made to the volume or sound quality during recording will not affect the recording.
- In order to prevent trouble caused by flat batteries, it is recommended that you either supply power to the unit from the household AC outlet or replace all the batteries with new ones when you are recording something which is important to you.
- The recording level is set automatically.

Note
If the unit is brought near a TV set during recording, noise may be recorded due to the effects of the signals from the TV set. Maintain a distance of at least 1.5 meters between the unit and a TV set.

To make a blank tape:
1. Load the recorded tape with the side to be erased facing upward.
2. Press ● (REC).
   ▶ PLAY is also depressed with ● (REC).

Recording from Radio Broadcasts A



1 Press ■/⏏ STOP/EJECT and load the tape.
Load the tape with the side to be recorded facing upward.

2 Tune in the station.
(See page 16.)

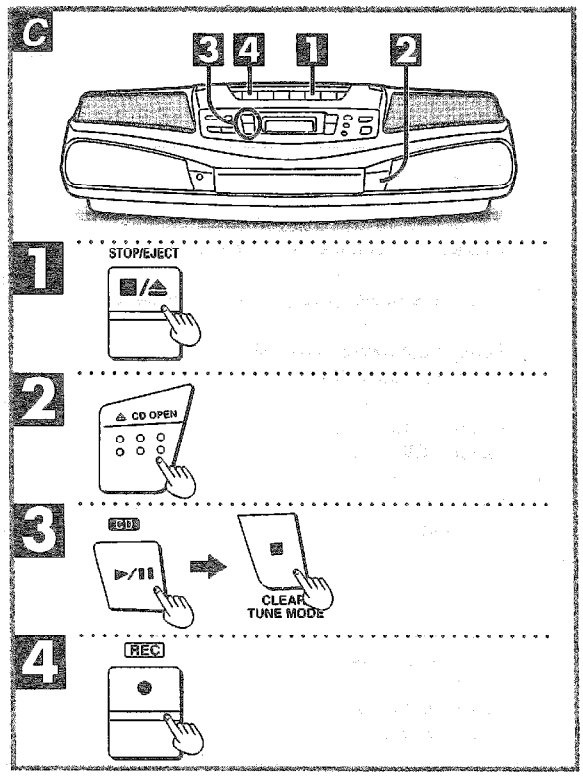
3 Press ● REC to start recording.
▶ PLAY is also depressed with ● REC.

To stop the recording:
Press ■/⏏ STOP/EJECT.

To stop the recording temporarily:
Press ▮▮ PAUSE.
To resume recording, press ▮▮ PAUSE again.

To reduce noise while recording an AM broadcast (Beat proof function): B
Press FM MODE/BP when recording or in the recording standby mode.
Each time you press the button, "bP1" and "bP2" will be displayed alternately. Select the position with the least noise.

Recording from CD C



1 Press ■/⏏ STOP/EJECT and load the tape.
Load the tape with the side to be recorded facing upward.

2 Press ⏏ CD OPEN and insert the CD.

3 Press ▶/▮▮, then press ■ CLEAR after the track number has been displayed.
The total number of tracks and total play time of the CD are displayed.

4 Press ● REC to start recording.
▶ PLAY is also depressed with ● REC.
CD play starts simultaneously.

To stop the recording:
Press ■ CLEAR and ■/⏏ STOP/EJECT.

Recording favorite tracks

Program desired tracks (refer to steps 2 to 4 on page 7) after step 3.

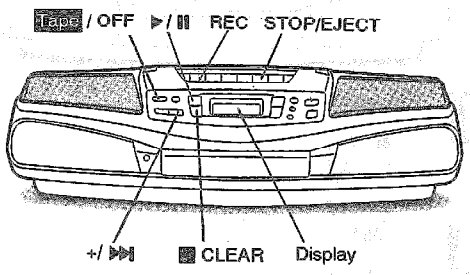
Self-Check Display

Self-diagnostic display

This unit is equipped with a self-diagnostic display function which, if a problem occurs, will display an error code corresponding to the problem. Use this function when performing maintenance on the unit.

Preparation

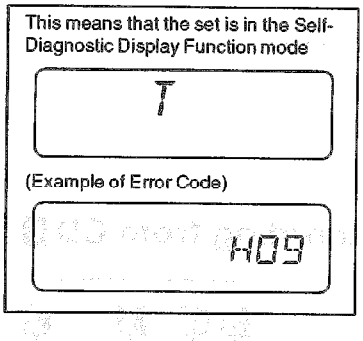
Normal blank tape with recording prevention tab on one side.



How to enter the Self-Diagnostic Display Function mode

1. Connect the power cord.
2. Close the CD compartment lid without putting a CD in.
3. Press "Tape/power standby (Tape / OFF)" button.
4. Press "CD play/pause (▶/ II)" button.
5. Press and hold the "CD stop (■ CLEAR)" button for at least 2 seconds.
   While pressing the "CD stop (■ CLEAR)" button, press the "CD skip (+/ ▶▶I)" button for 2 seconds.
   "T" will appear on the FL display.
   (The set is in the Self-Diagnostic Function Mode)
6. Open the CD lid.
7. Close the CD lid.
8. Load the normal blank tape to Deck.
9. Press the "REC" button.
10. Press the "Stop/Eject" button.

Press the "CD stop (■ CLEAR)" to check the result. If there is problem, the error code shall be displayed. (If no problem, display shows "T" indication.)
In case several probrems exist, error code will change each time you press the "CD stop (■ CLEAR)" button.



How to get out from the Self-Diagnostic Display Function

Select Operation Selector to other mode except CD.

Interpretation of Error Codes

(Note : * means error code will be displayed automatically)

Error Code	Problem condition	Correction procedure
*U01	When the unit is operating on batteries, power supply ceases soon after the power is turn on.	It is due to consumption of batteries. Replace the batteries with new ones.
*U02	Turn the power on causes no supply of power.	Check the power plug (AC) or insert batteries (DC).
H09	Tape does not play even pressing PLAY button.	Faulty Leaf switch (SW302). Faulty operation Q616.
H16	CD does not operate and indicate ⌈ NO DISC ⌋.	Faulty contact or short circuit of CD tray close switch. (SW602)
F15	Relatively long time (about 10sec) is required to begin play when the CD play button is pressed from the power-off state or from a function other than CD player.	Faulty contact on CD mechanism optical pick-up rest switch (S701).
F26	CD does not operate and LCD shows ⌈ F26 ⌋.	Faulty data communication of servo processor IC and microprocessor.
F69	CD does not start to play at syncro-recording function mode.	Faulty contact or short circuit of recording switch (SW301).

Operation Checks and Main Component Replacement Procedures

NOTE

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Select item from the following index when checks or replacement are required.
4. Refer the parts No. on the page of "Main Component Replacement Procedures", if necessary.

• Contents

Checking Procedures for each P.C.B. Page.

1. Checking for the main P.C.B. and CD servo P.C.B.. ..... 11.

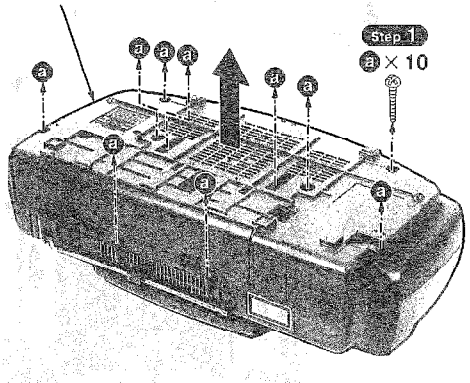
Main Component Replacement Procedures

1. Replacement for the traverse deck ass'y. ..... 12~14.
2. Replacement for the mechanism unit. ..... 14,15.
3. Replacement for the pinch roller ass'y, erase head and rec/play head. ..... 16.
4. Replacement for the motor ass'y, main belt and fast forward belt. ..... 16,17.
5. Replacement for the cassette lid ass'y. ..... 17.
6. Replacement for the handle. ..... 18.

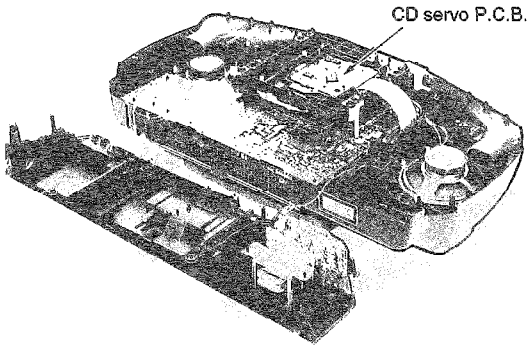
Checking procedures for each P.C.B.

1. Checking for the main P.C.B. and CD servo P.C.B.

Step 2
Remove the bottom cabinet ass'y.

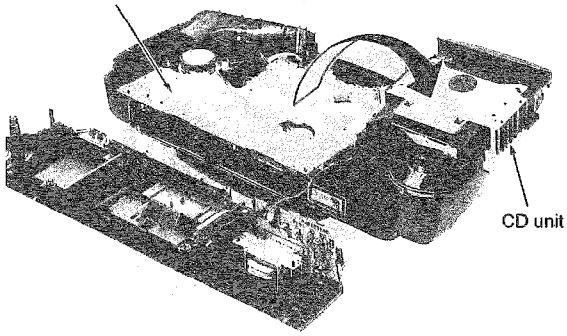


• Check the CD servo P.C.B. as shown below.



• Check the main P.C.B. as shown below.

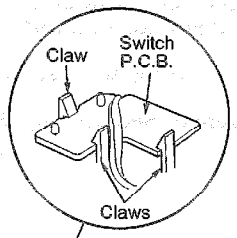
Step 3
Upset the CD unit, and then locate it at right side of main unit.



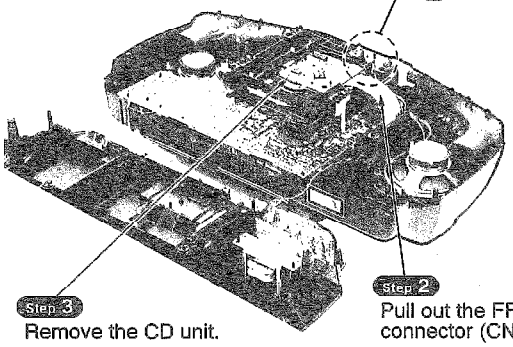
Main Component Replacement Procedures

1. Replacement for the traverse deck ass'y

• Follow the Step 1, Step 2 of the item 1 in checking procedure for each P.C.B. on page 11.



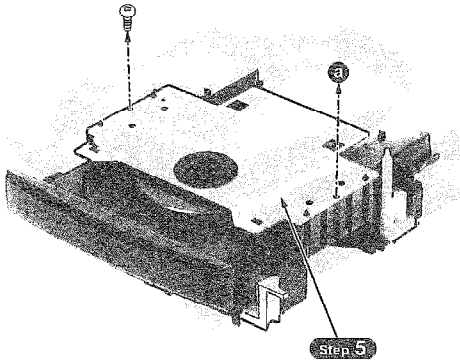
Step 1
Release the 3 claws, and then remove the switch P.C.B..



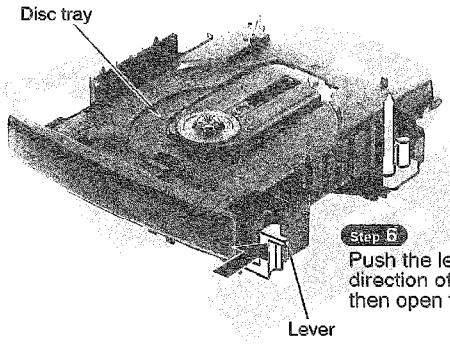
Step 3
Remove the CD unit.

Step 2
Pull out the FFC from connector (CN702).

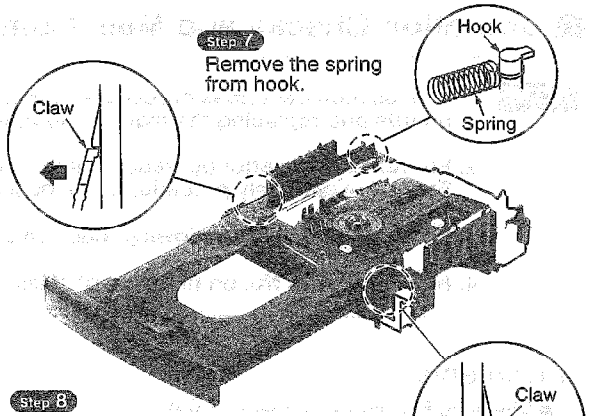
Step 4
ⓐ × 2



Step 5
Remove the disc holder ass'y.



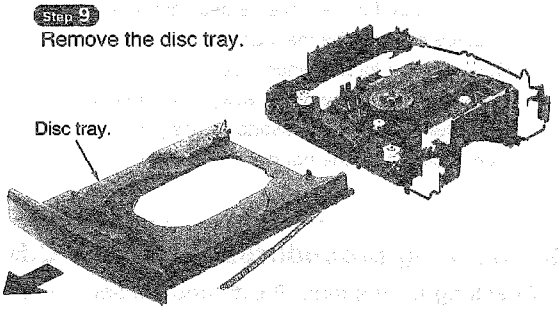
Step 6
Push the lever in the direction of arrow, and then open the disc tray.



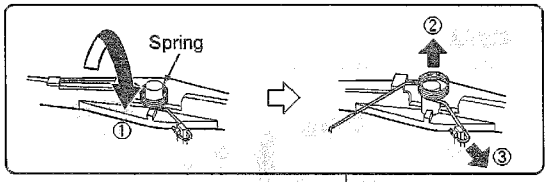
Step 7
Remove the spring from hook.

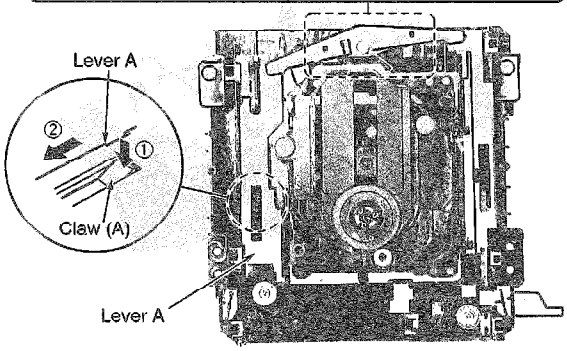
Step 8
Release the 2 claws.

Step 9
Remove the disc tray.



Step 10
Remove the spring.





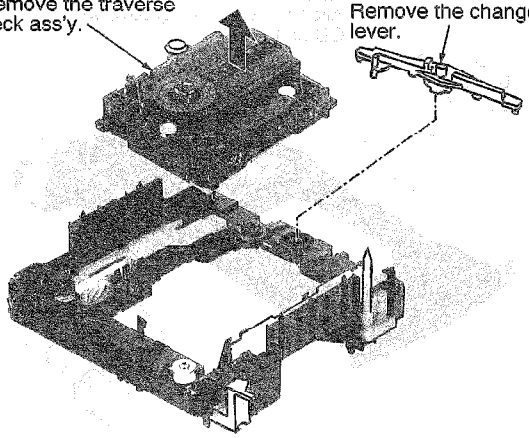
Step 11
Push the claw (A) in the direction of arrow ①, and then move the lever A in the direction of arrow ②.

NOTE

Be careful not to damage the claw (A) because the claw (A) is breakable.

Step 13
Remove the traverse deck ass'y.

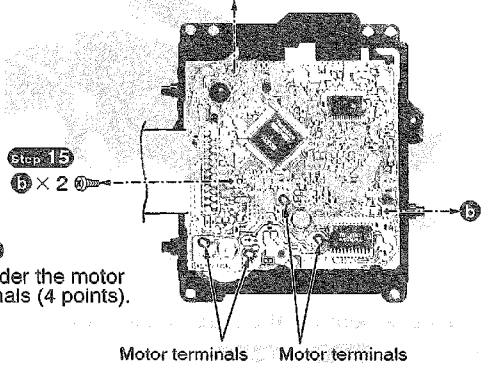
Step 12
Remove the change lever.



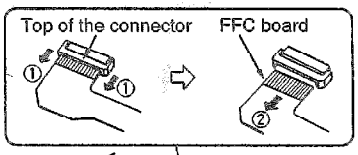
Step 14
C

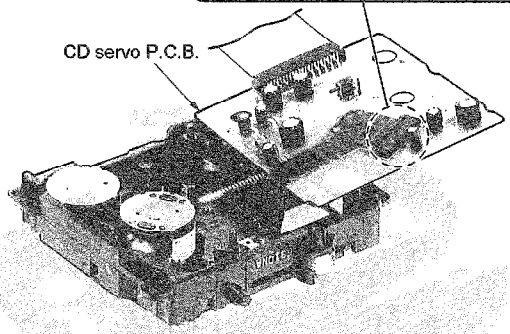
Step 15
B × 2

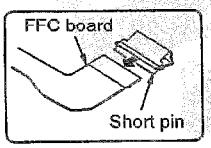
Step 16
Unsolder the motor terminals (4 points).



Step 17
Remove the FFC board from connector.



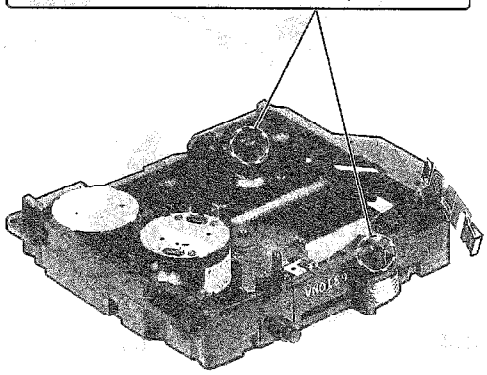


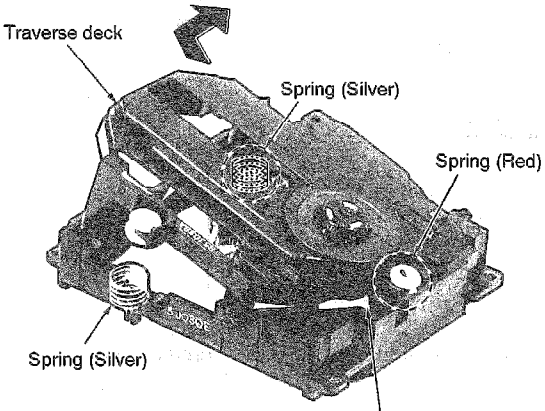


Caution:
Insert a short pin into the traverse unit FFC board.
(Refer to "Handling Precautions for Traverse Deck" on page 3.)

Step 18
Remove the pin.

1. Widen the boss using a reguler screwdriver.
2. Pull out the pin in the direction of the arrow.

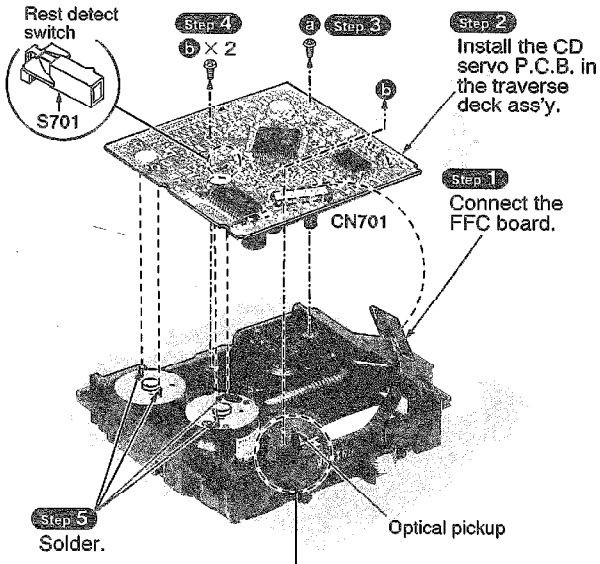


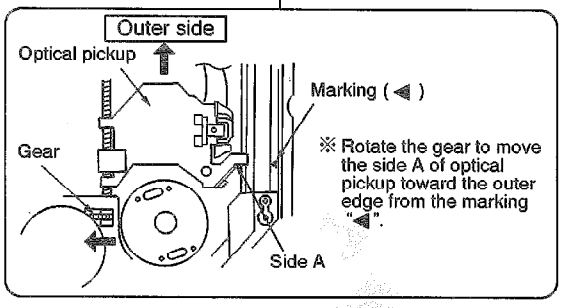


Step 19
Release the claw.

NOTE
Be careful not to lose the 3 springs because those will also be removed on removal of the traverse deck.

Installation of the CD servo P.C.B. after replacement

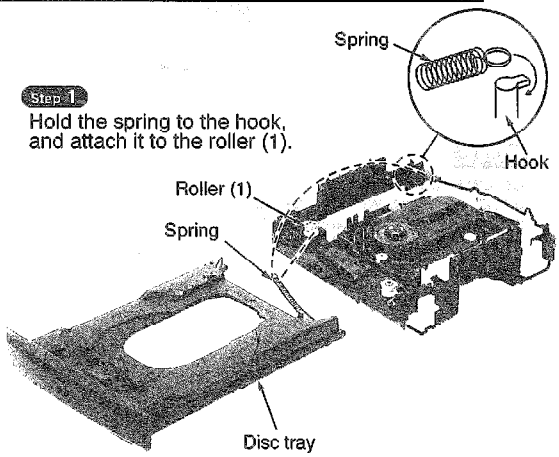


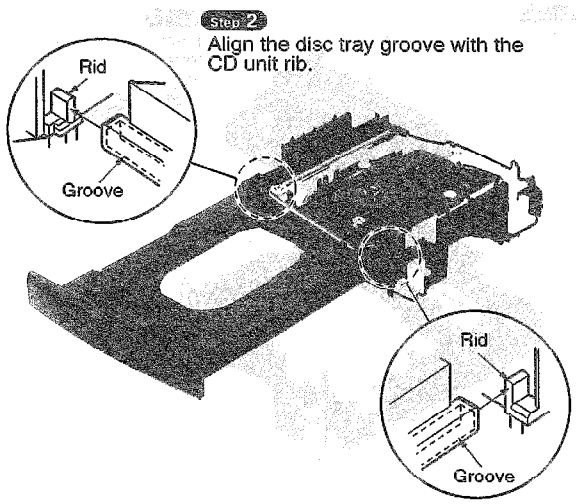

Outer side
Optical pickup
Marking (◀)
Gear
※ Rotate the gear to move the side A of optical pickup toward the outer edge from the marking "◀".
Side A

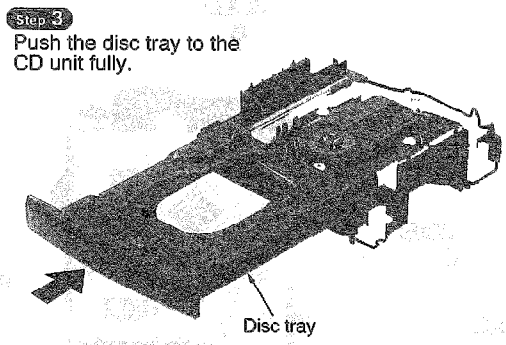
NOTE

Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from the mark "▼". [Otherwise, the rest detect switch (S701) mounted on the CD servo P.C.B.

Installation of the disc tray after replacement

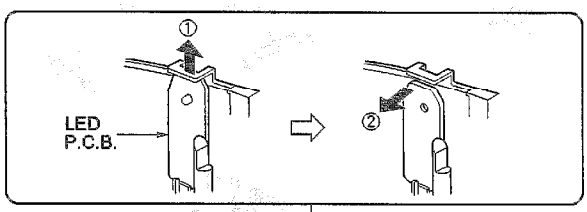


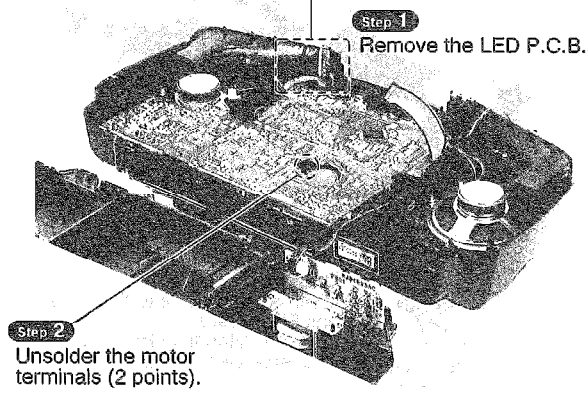


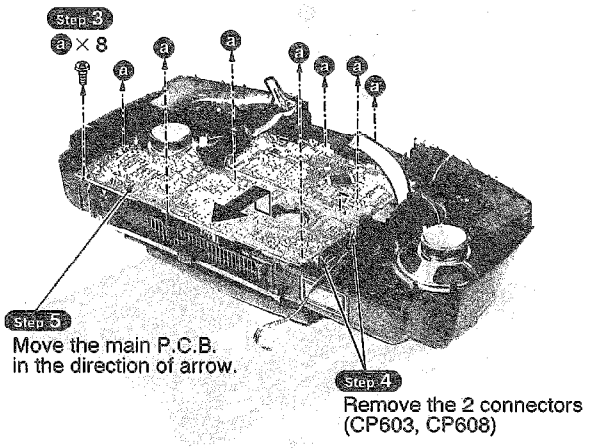


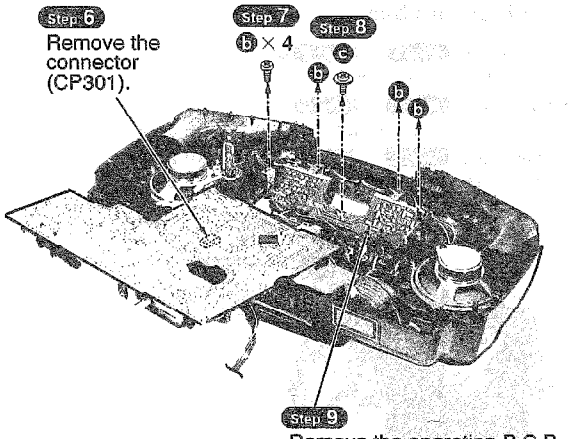
2. Replacement for the mechanism unit

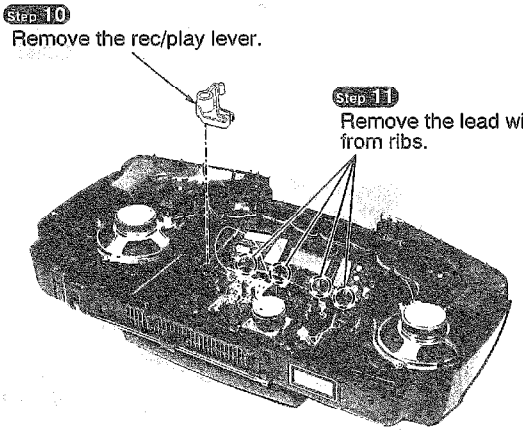
- Follow the Step 1 , Step 2 of the item 1 in checking procedure for each P.C.B. on page 11.
- Follow the Step 1 ~ Step 3 of the item 1 in main component replacement procedures on page 12.

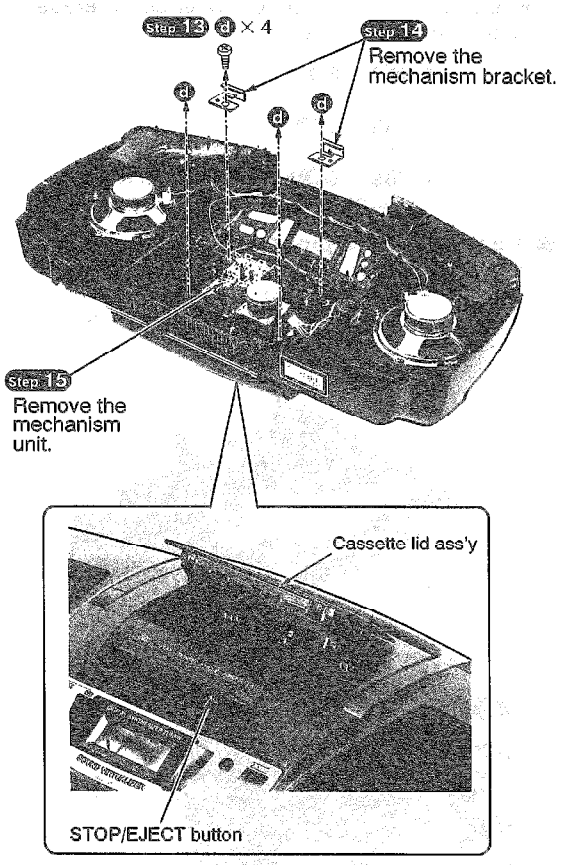




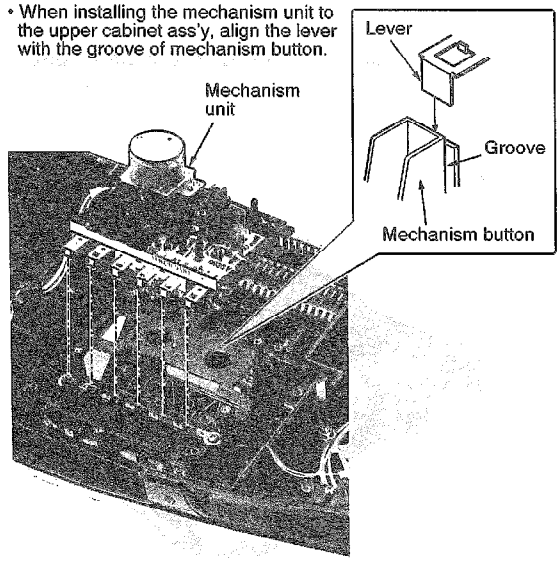








Notice for installation of mechanism unit

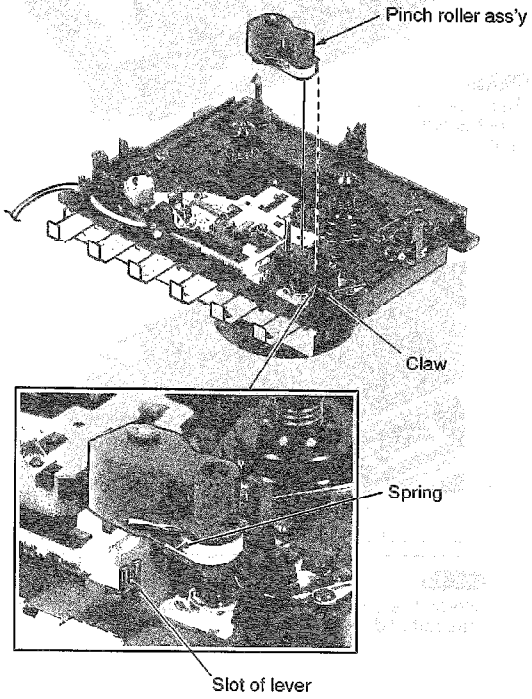

• When installing the mechanism unit to the upper cabinet ass'y, align the lever with the groove of mechanism button.
Lever
Mechanism unit
Groove
Mechanism button

3. Replacement for the pinch roller ass'y, erase head and rec/play head

- Follow the Step 1 , Step 2 of the item 1 in checking procedure for each P.C.B. on page 11.
- Follow the Step 1 ~ Step 3 of the item 1 in main component replacement procedures on page 12.
- Follow the Step 1 ~ Step 15 of the item 2 in main component replacement procedures on pages 14 and 15.

Removal of the pinch roller ass'y

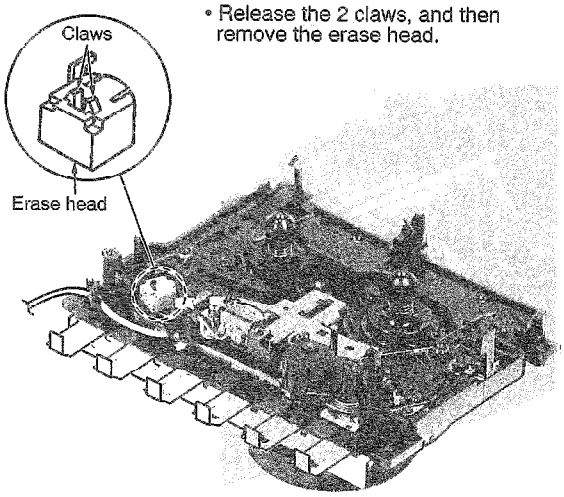
- Release the 1 claw, and then pull out the pinch roller ass'y.



- **Notice for installation of pinch roller ass'y**
  The pinch roller ass'y spring should be aligned with the slot of lever.

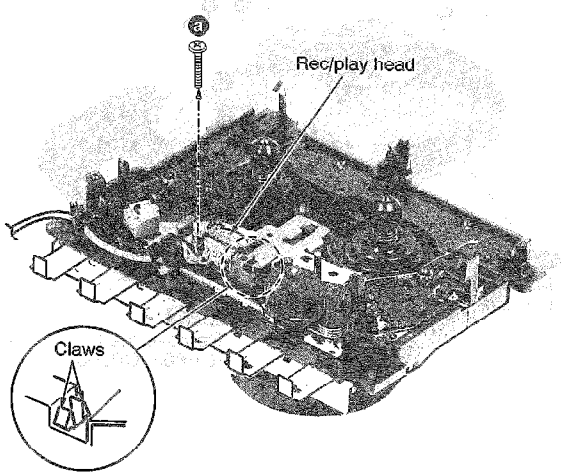
Removal of the erase head

- Release the 2 claws, and then remove the erase head.



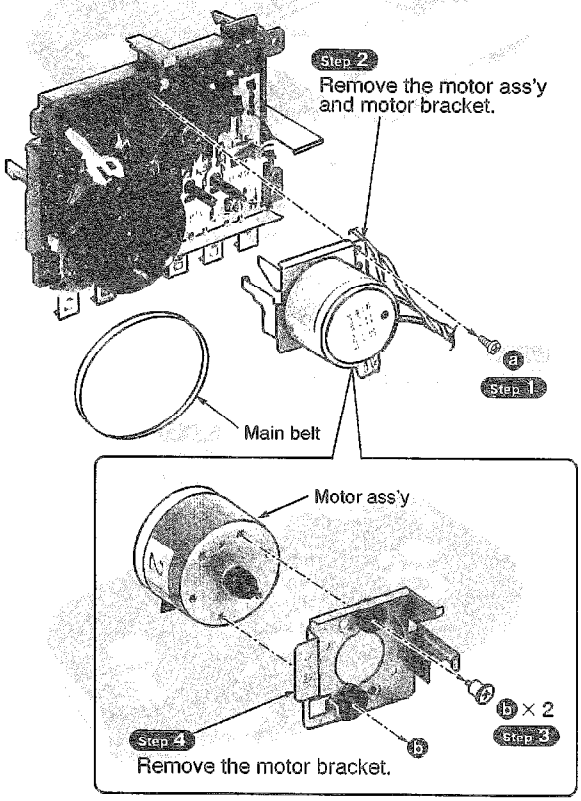
Removal of the rec/play head

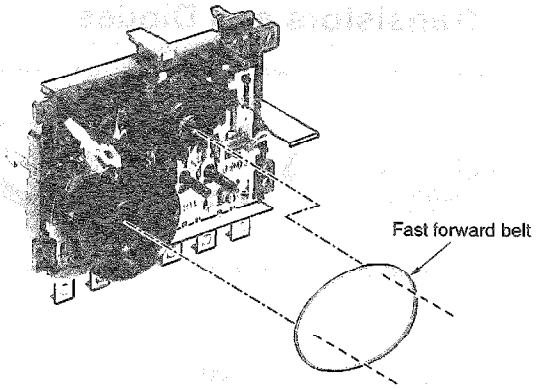
1. Remove the 1 screw (a).
2. Release the 2 claws, and then remove the rec/play head.



4. Replacement for the motor ass'y, main belt and fast forward belt

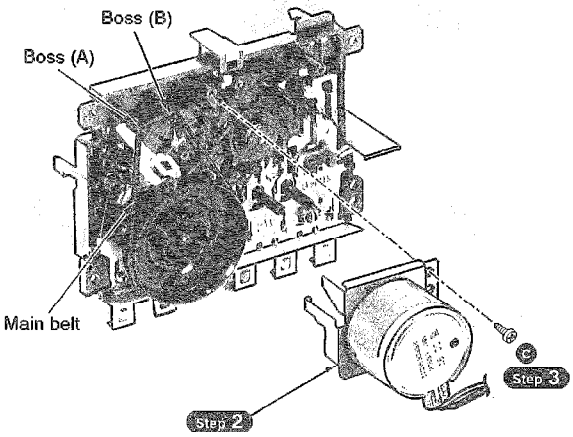
- Follow the Step 1 , Step 2 of the item 1 in checking procedure for each P.C.B. on page 11.
- Follow the Step 1 ~ Step 3 of the item 1 in main component replacement procedures on page 12.
- Follow the Step 1 ~ Step 15 of the item 2 in main component replacement procedures on pages 14 and 15.





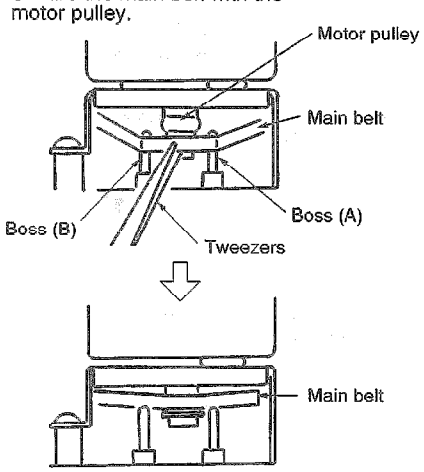
Installation of the main belt

Step 1
Temporarily secure the main belt as show below.



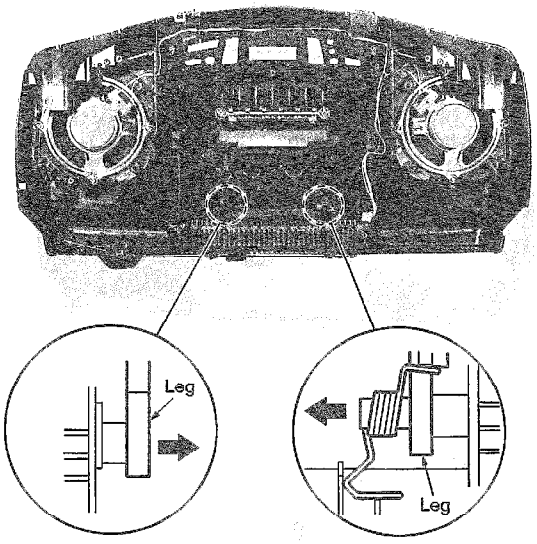
Step 2
Install the motor ass'y and motor bracket to the mechanism unit.

Step 4
Secure the main belt with the motor pulley.

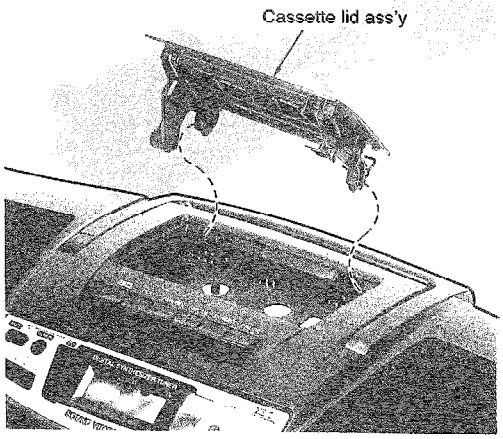


5. Replacement for the cassette lid ass'y

- Follow the Step 1 , Step 2 of the item 1 in checking procedure for each P.C.B. on page 11.
- Follow the Step 1 ~ Step 3 of the item 1 in main component replacement procedures on page 12.
- Follow the Step 1 ~ Step 15 of the item 2 in main component replacement procedures on pages 14 and 15.



Step 1
Release the legs of cassette lid ass'y in the direction of arrow.

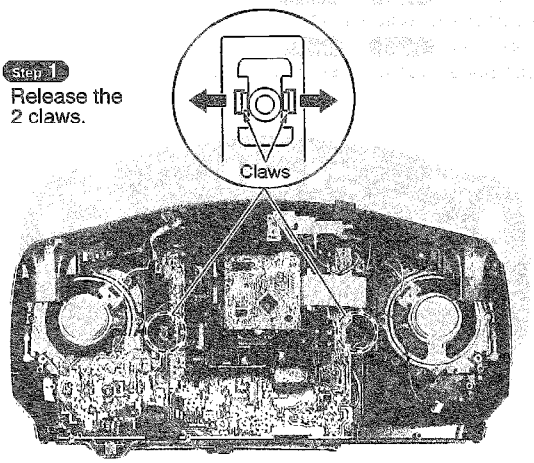


Step 2
Remove the cassette lid ass'y.

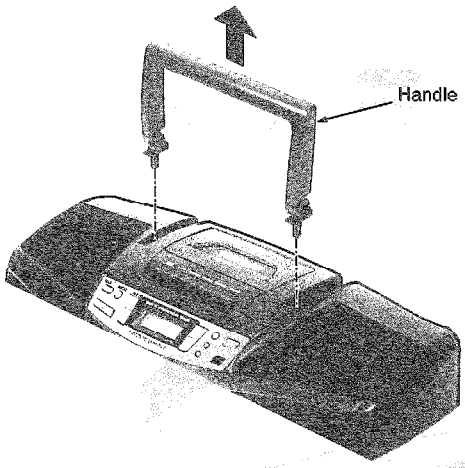
6. Replacement for the handle

• Follow the Step 1 , Step 2 of the item 1 in checking procedure for each P.C.B. on page 11.

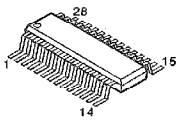
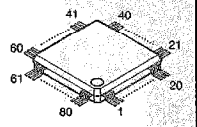
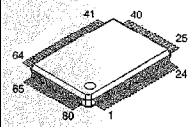
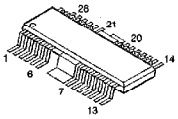
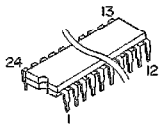
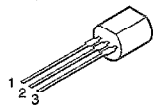
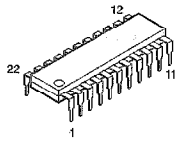
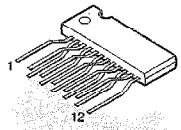
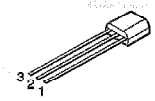
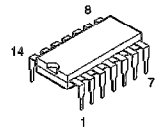
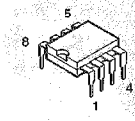
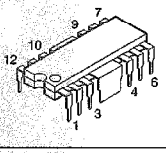
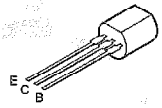
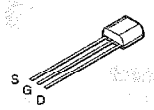
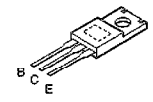
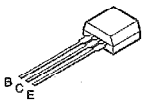
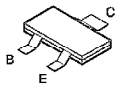
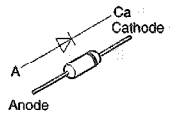
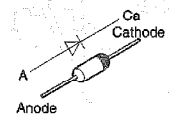
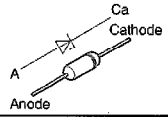
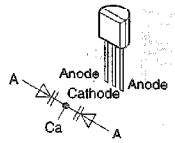
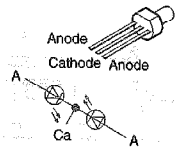
Step 1
Release the 2 claws.



Step 2
Pull out the handle.



Type Illustration of IC's, Transistors and Diodes

AN8837SBE1 	MN662746RPK1 	M38224M6M056 
AN8780NSBE2 	TA2008AN 	S81250SGY-Z 
LC72131-D 	BA3313L 	BMR0301G 
BU4066BC 	M62429P 	LA4227 
2SA952LTA 	2SJ40CTA 	2SB1566E 
	2SC1740SLNRT 2SC1740SRTA RVTDTA114EST RVTDTC114TST RVTDTC143XST RVTDTC144EST	2SA1037AKSTX DTC114YKA146 
RB441QT-77 RVD1SS133TA 	1SR35400V 	MTZJ15BTA MTZJ5R1BTA MTZJ7R5CTA 
KV1360NTM SVC346T-AA 	SPR325MVWT31 	

Schematic Diagram

Notes:

- **S301-1 ~ S306-6:** Record/Playback select switch in "playback" position. (P ... Playback, R ... Record)
- **S601:** Motor switch.
- **S602:** CD tray open switch.
- **S701:** Rest switch in "OFF" position.
- **S801:** Tape/power standby switch.
- **S802:** Tuning/CD skip, search (− / ⏮) switch.
- **S803:** Tuning/CD skip, search (+ / ⏭) switch.
- **S804:** CD stop/program clear, tuning mode select switch.
- **S805:** Sleep timer switch.
- **S806:** Volume control (−) switch.
- **S807:** Volume control (+) switch.
- **S808:** CD program, tuner preset switch.
- **S809:** Stereo/monaural, beat proof/CD play mode select switch.
- **S810:** XBS switch
- **S811:** Tuner/band switch
- **S812:** CD play/pause (▶ / ⏸) switch.
- **S901:** AC/DC select switch in "AC" position. (JK901)
- **Battery Current:**

Vol. min. ...	110 mA (FM)	Vol. max. ...	228 mA (FM)	Measurement condition
	103 mA (AM)		216.7 mA (AM)	Radio : FM 60 dB, 30% mod.
	141.3 mA (TAPE)		333 mA (TAPE)	AM 74 dBm, 30% mod.
	260 mA (CD)		830 mA (CD)	Tape : 315 Hz, 0 dB
				CD : 1 kHz, 0 dB

- The voltage value and waveforms are the reference voltage of this measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of GND terminal (DC IN Jack)..
  Accordingly, there may arise some errors in voltage values and waveforms depending upon the internal impedance of the tester or measuring unit.

No mark ·····	DC STOP	( ) ·····	CD playback (1 kHz, L + R, 0 dB)
< > ·····	>FM	⌜ ⌟ ·····	AM
[ ] ·····	Record	(( )) ·····	Playback

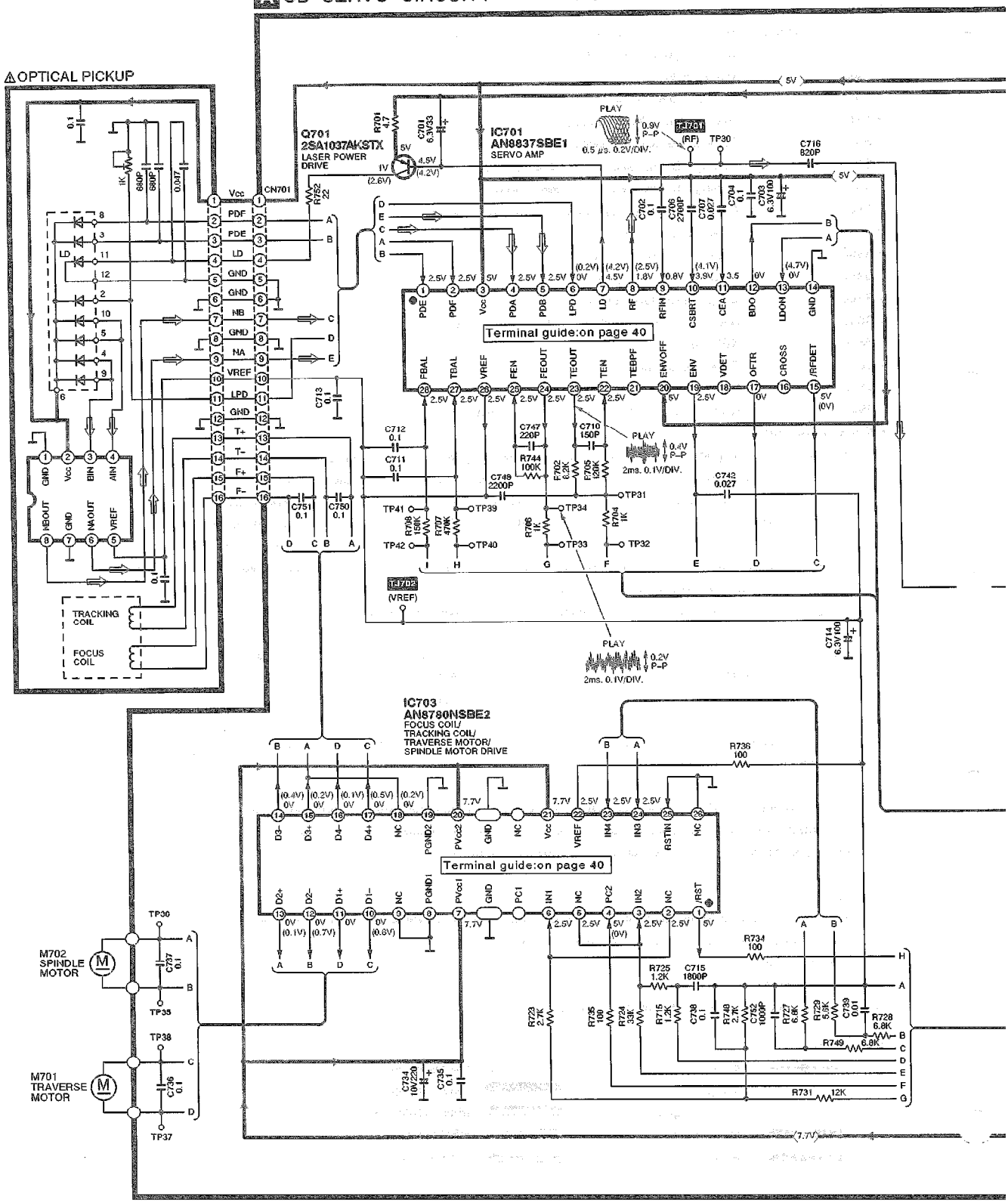
- Mesurement conditions:
  * The parenthesized is the voltage for test disc (1 Khz, L + R, 0 dB) in play mode, and the other, for no disc in stop mode.
  * AC adaptor is used for power supply.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components be sure to use only manufacturer's specified parts shown in the parts list.

- **Caution!**
  IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
  - Cover the parts boxes made of plastics with aluminum foil.
  - Ground the soldering iron.
  - Put a conductive mat on the work table.
  - Do not touch the pins of IC or LSI with fingers directly.

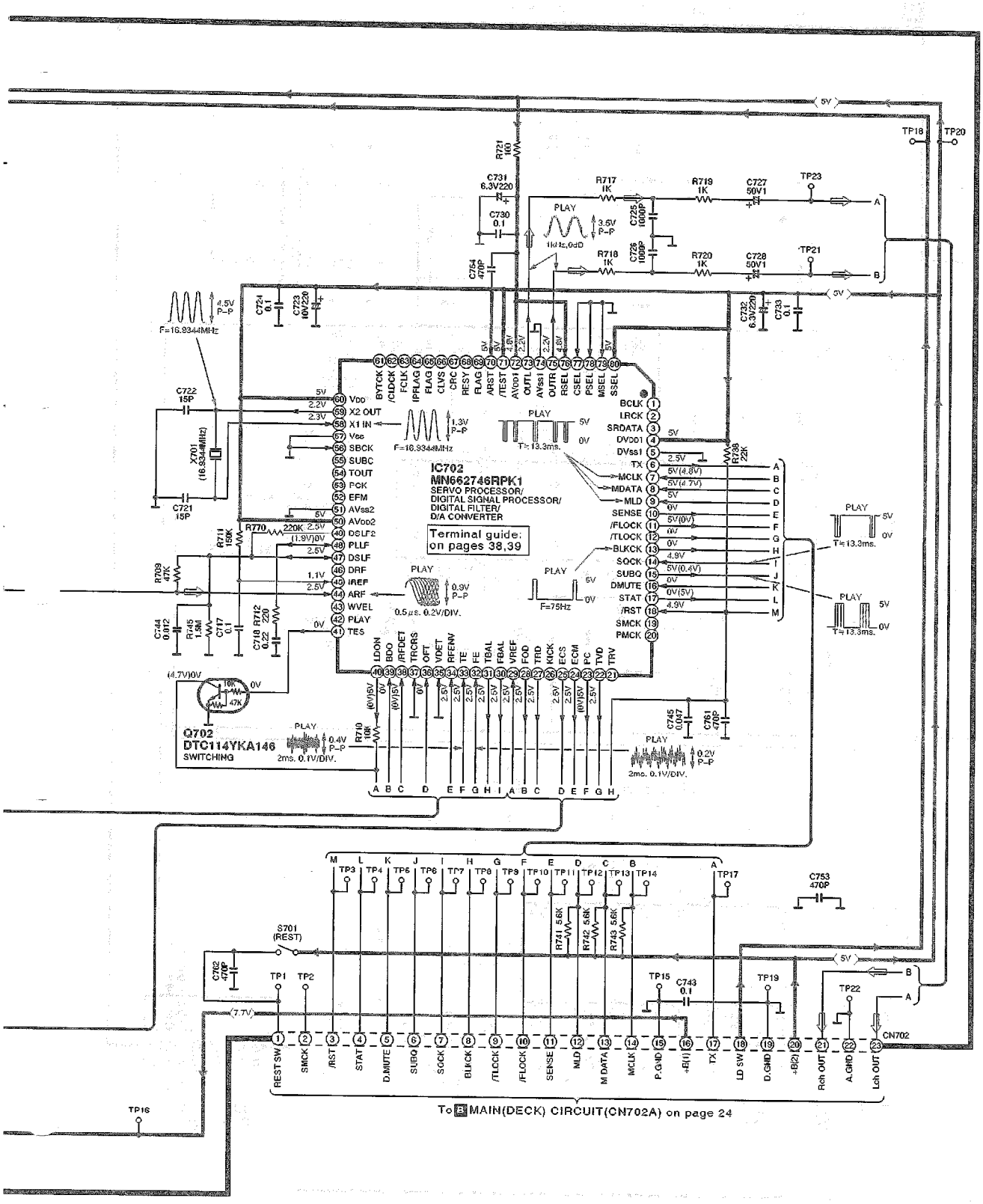
- Signal Lines

——▶	: +B line	⇨	: CD signal line
□□□□▷	: FM signal line	⇨	: Playback signal line
□□□□□□□▷	: FM OSC signal line	⇨	: Main signal line
⇨	: AM signal line	⇨	: REC signal line
▮▮▮▮▮▮▮▮▶	: AM OSC signal line	▭▭▭▭▶	: FM/AM Vcap signal line

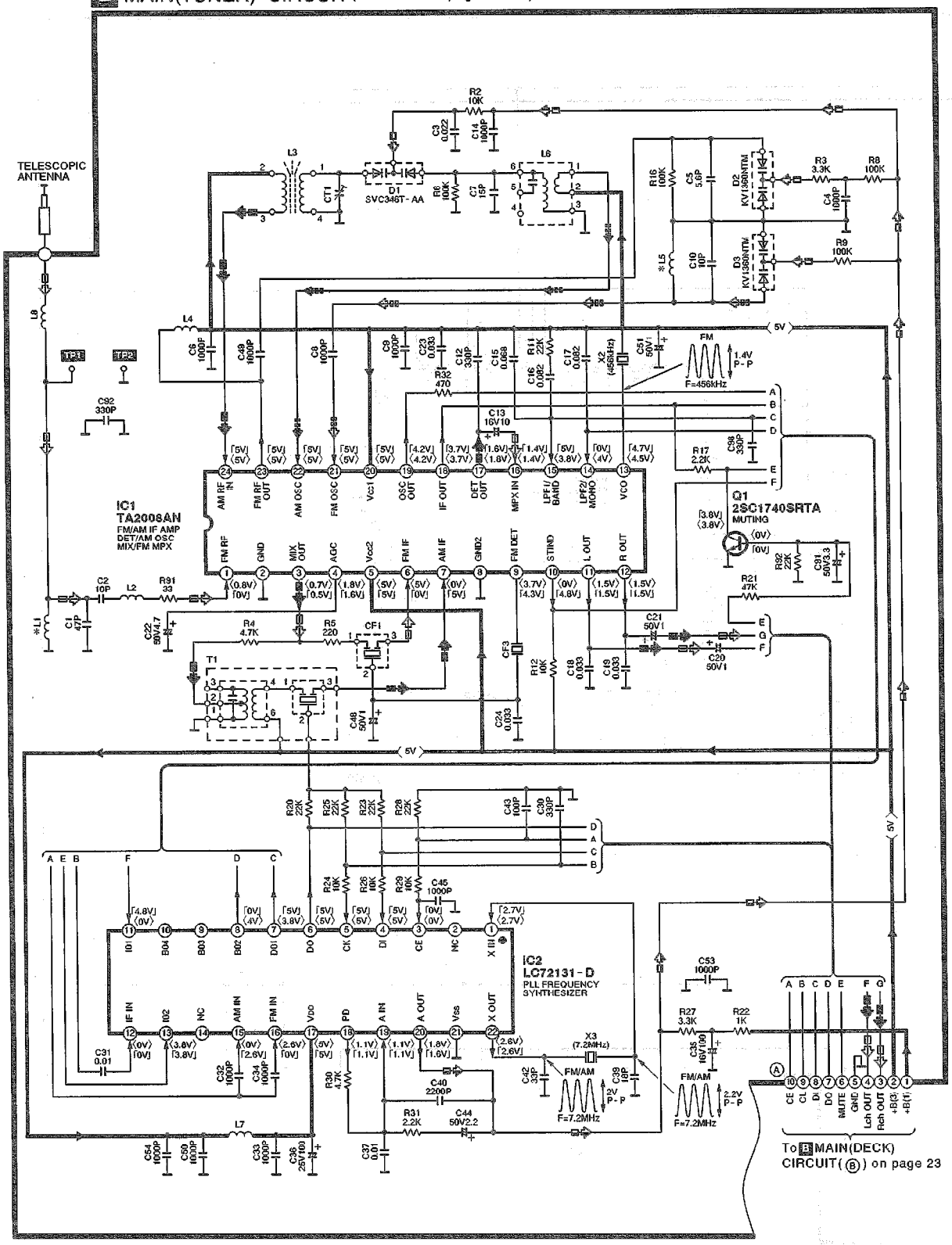
A CD SERVO CIRCUIT (P.C.Board:on page 27)

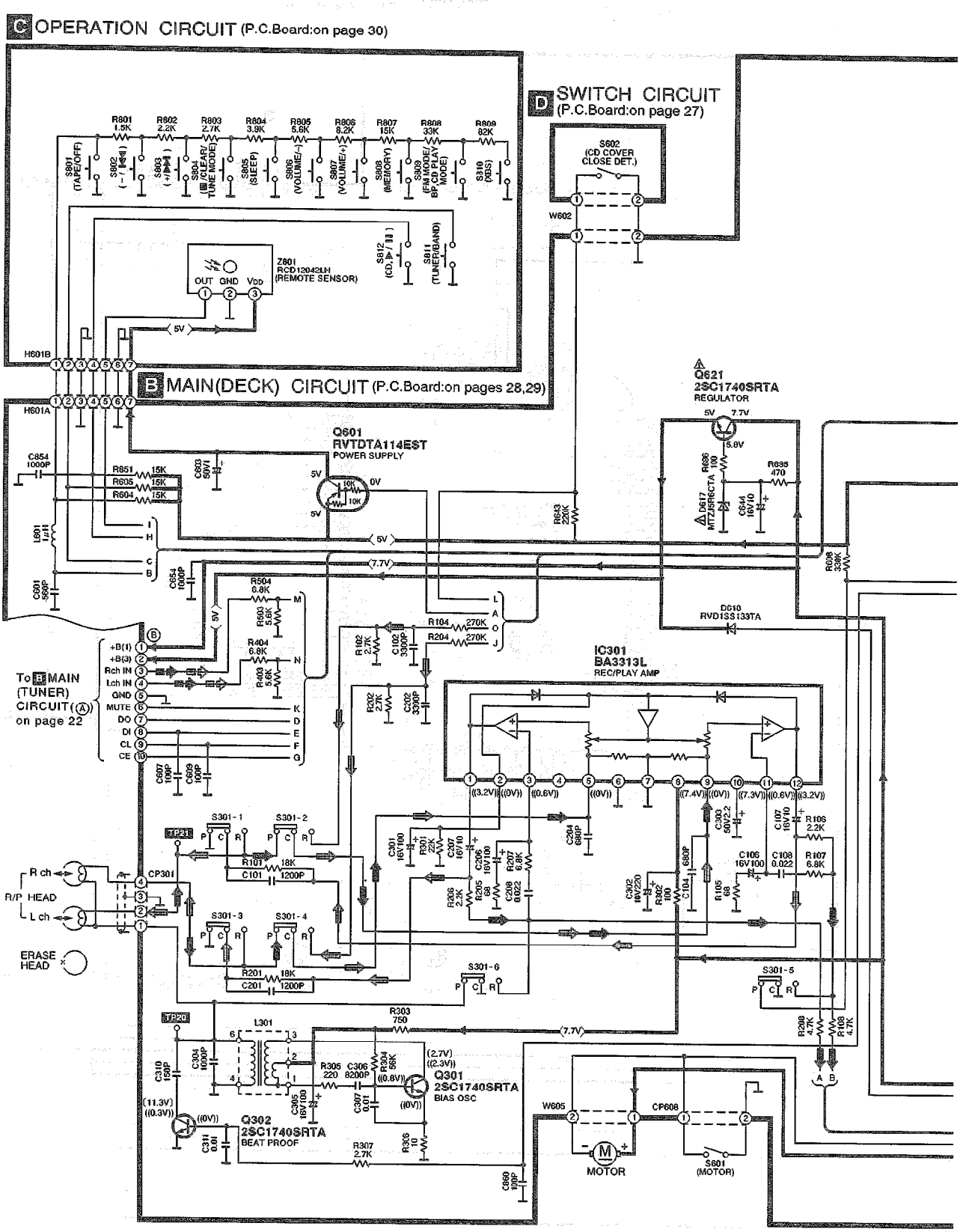


: CD signal line : +B line

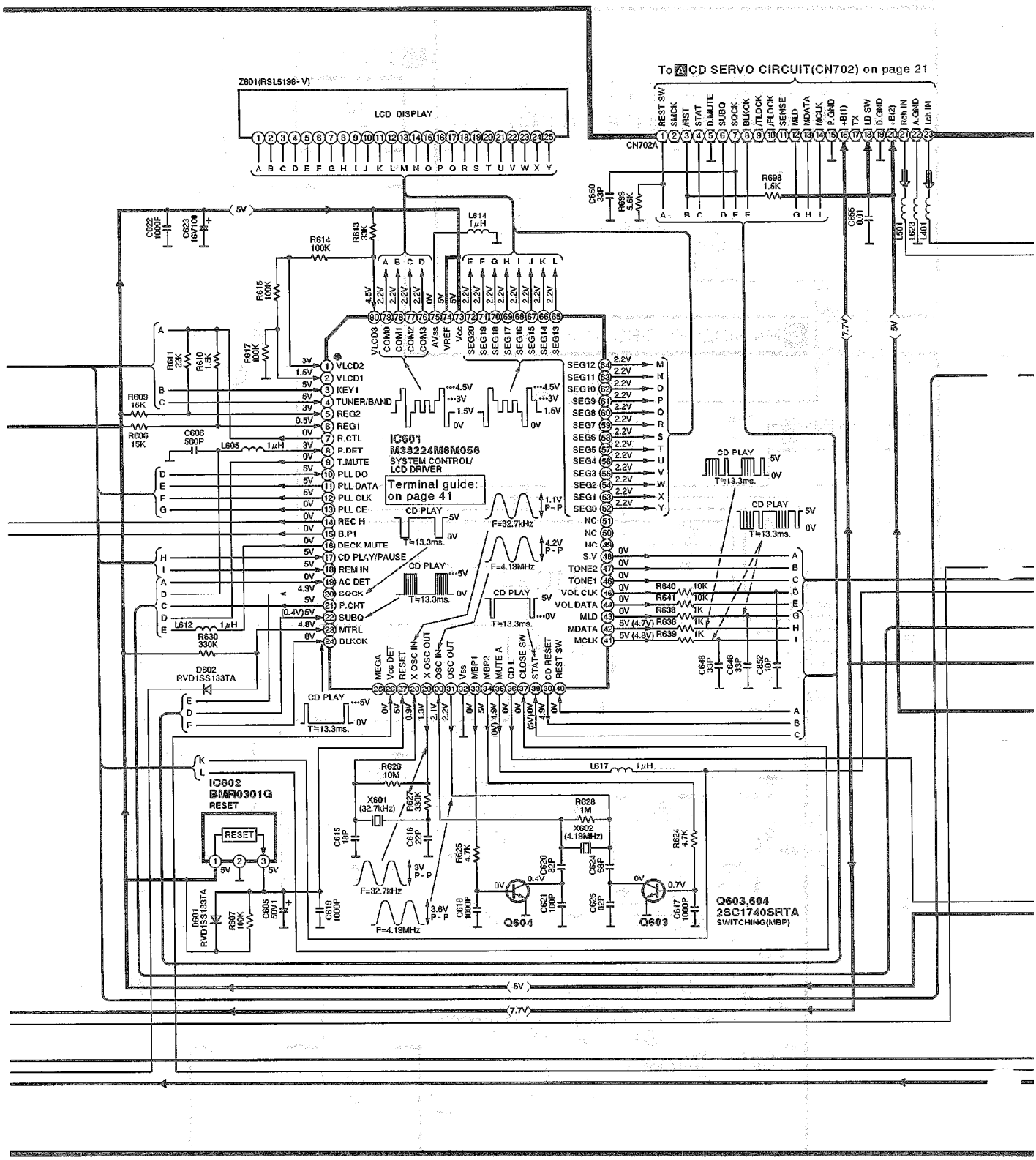


B MAIN(TUNER) CIRCUIT (P.C.Board:on pages 28,29)



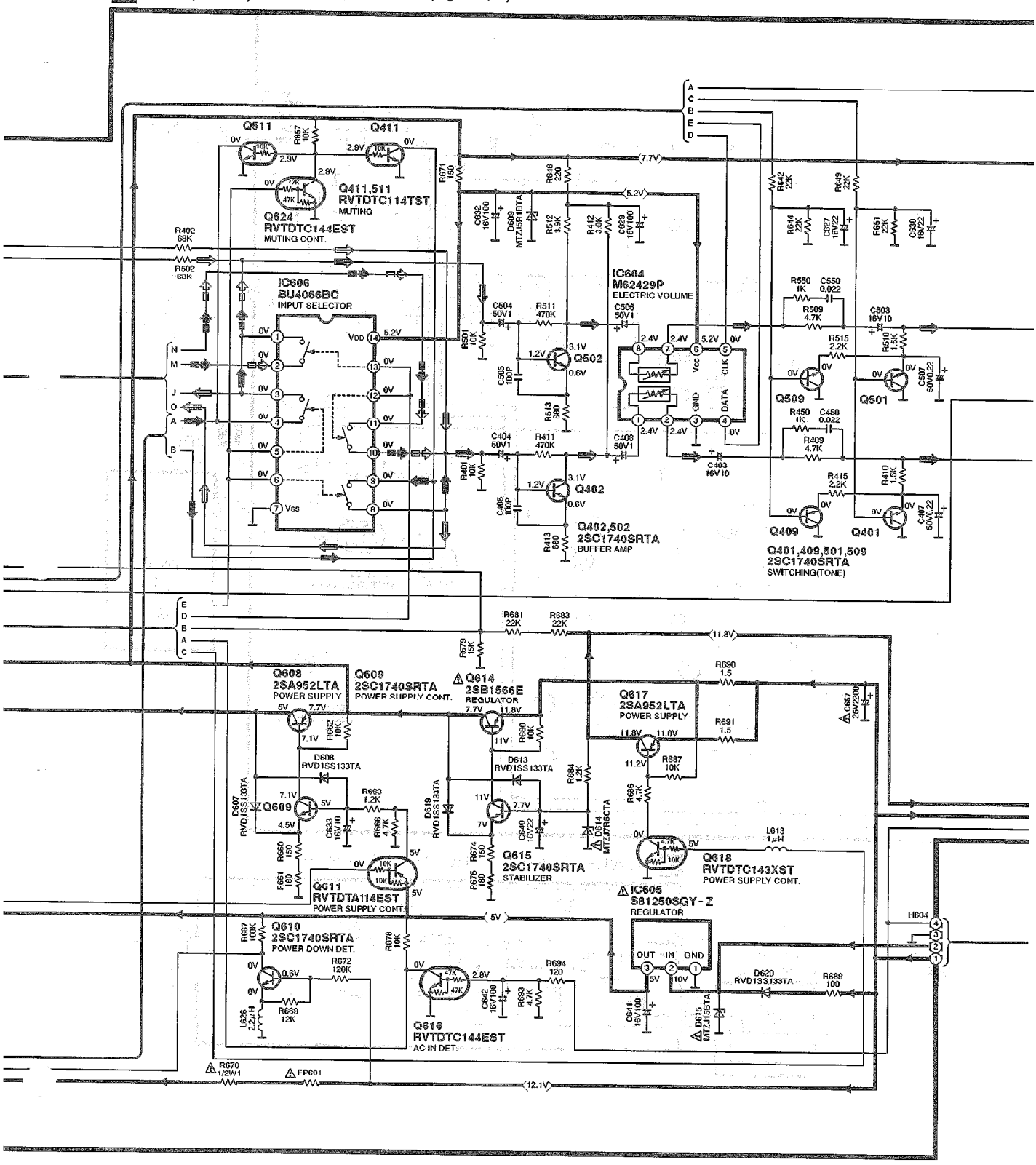

C OPERATION CIRCUIT (P.C.Board:on page 30)
D SWITCH CIRCUIT (P.C.Board:on page 27)
B MAIN(DECK) CIRCUIT (P.C.Board:on pages 28,29)
S602 (CD COVER CLOSE DET.)
W602
Z801 RCD12042LN (REMOTE SENSOR)
OUT GND VDD
H601B
H601A
Q601 RVTDTA114EST POWER SUPPLY
Q621 2SC1740SRTA REGULATOR
D617 MTZJ5R6CTA
D610 RVD1SS133TA
IC301 BA3313L REC/PLAY AMP
To B MAIN (TUNER) CIRCUIT (A) on page 22
+B(1)
+B(3)
Rch IN
Lch IN
GND
MUTE
DO
DI
CL
CE
R ch
L ch
R/P HEAD
ERASE HEAD
CP301
TP2L
TP2R
S301-1
S301-2
S301-3
S301-4
S301-5
S301-6
L301
Q302 2SC1740SRTA BEAT PROOF
Q301 2SC1740SRTA BIAS OSC
W605
CP608
MOTOR
S601 (MOTOR)

: CD signal line : Main signal line

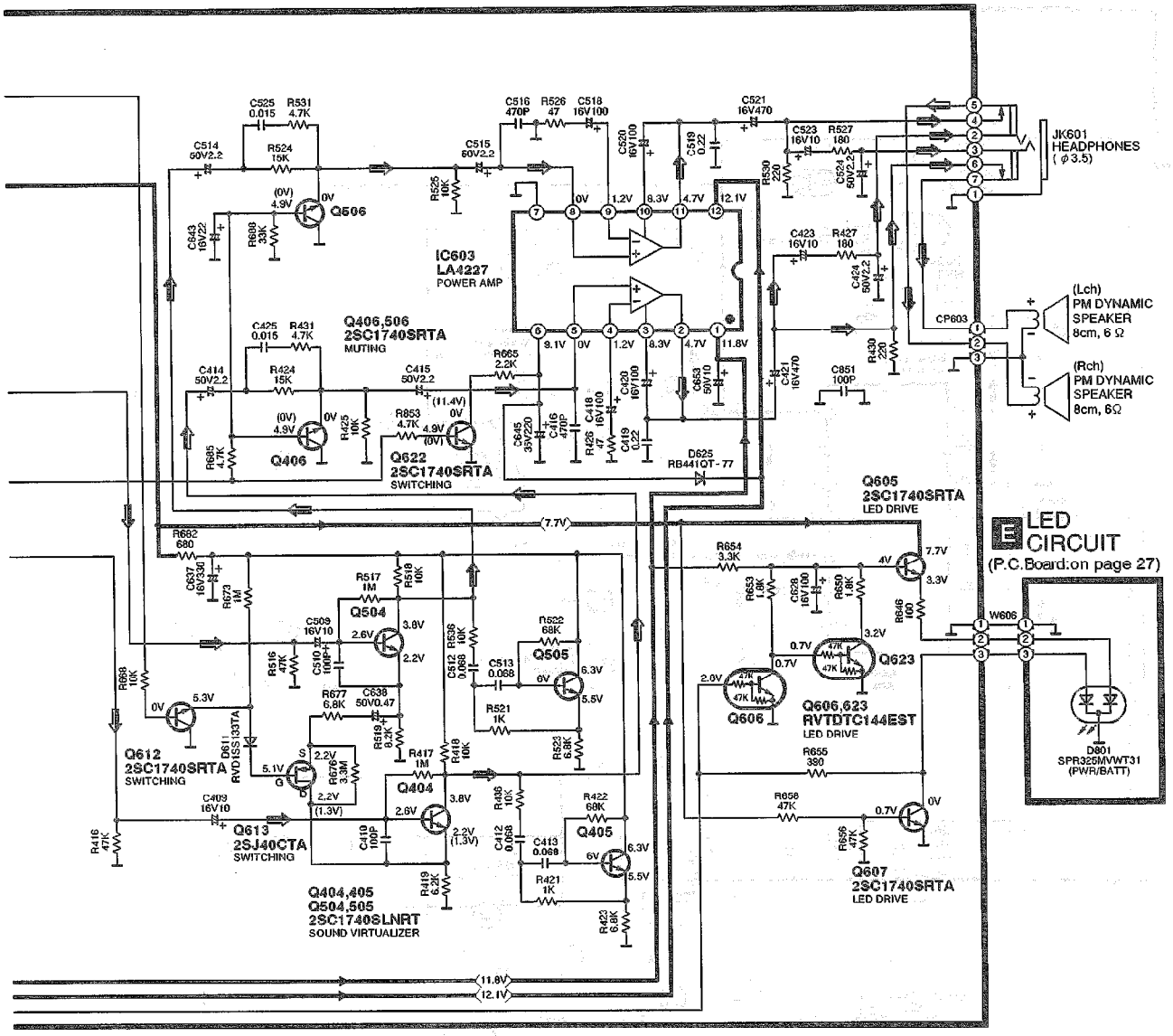


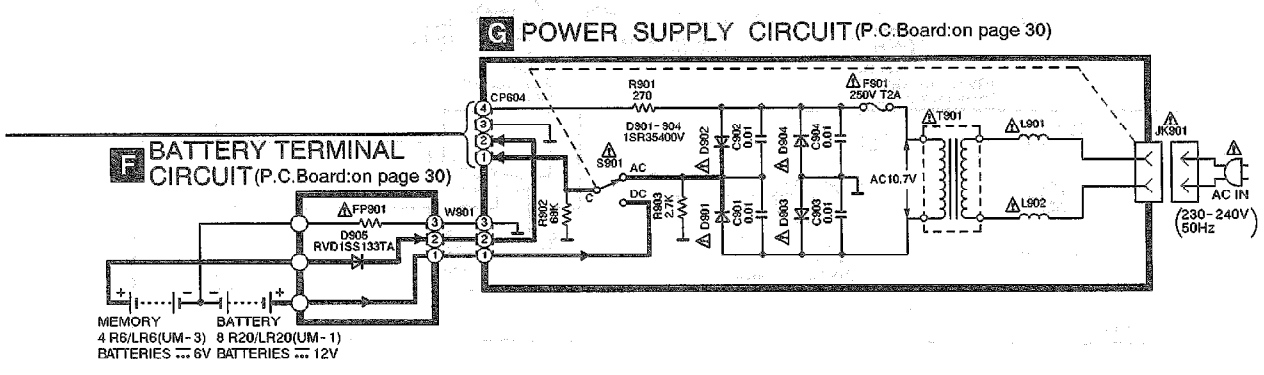
: AM signal line : FM signal line : Playback signal line : REC signal line

B MAIN(DECK) CIRCUIT (P.C.Board:on pages 28,29)



: Main signal line

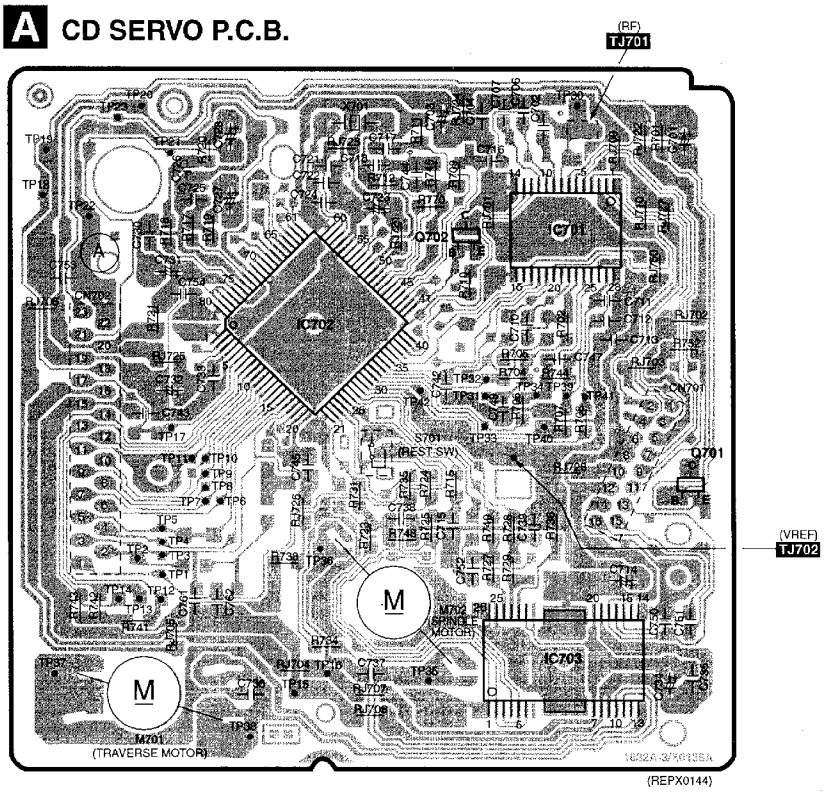




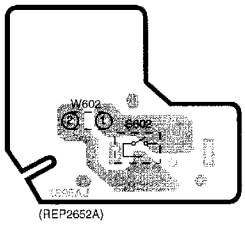
■ Printed Circuit Board Diagram

• This circuit board diagram may be modified at any time with the development of new technology.

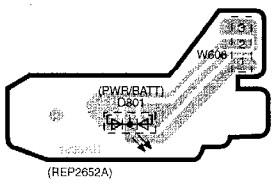
A CD SERVO P.C.B.



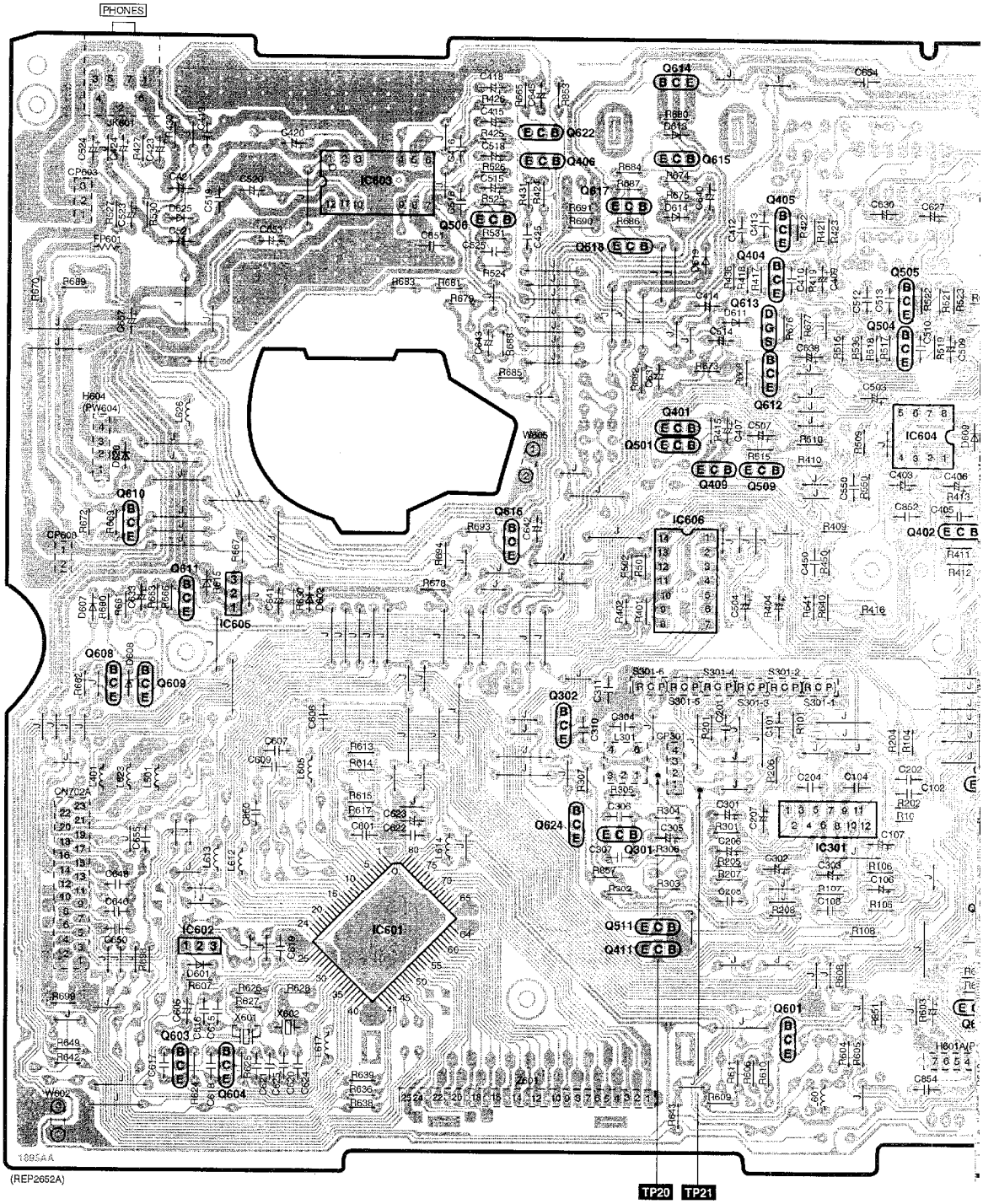
D SWITCH P.C.B.

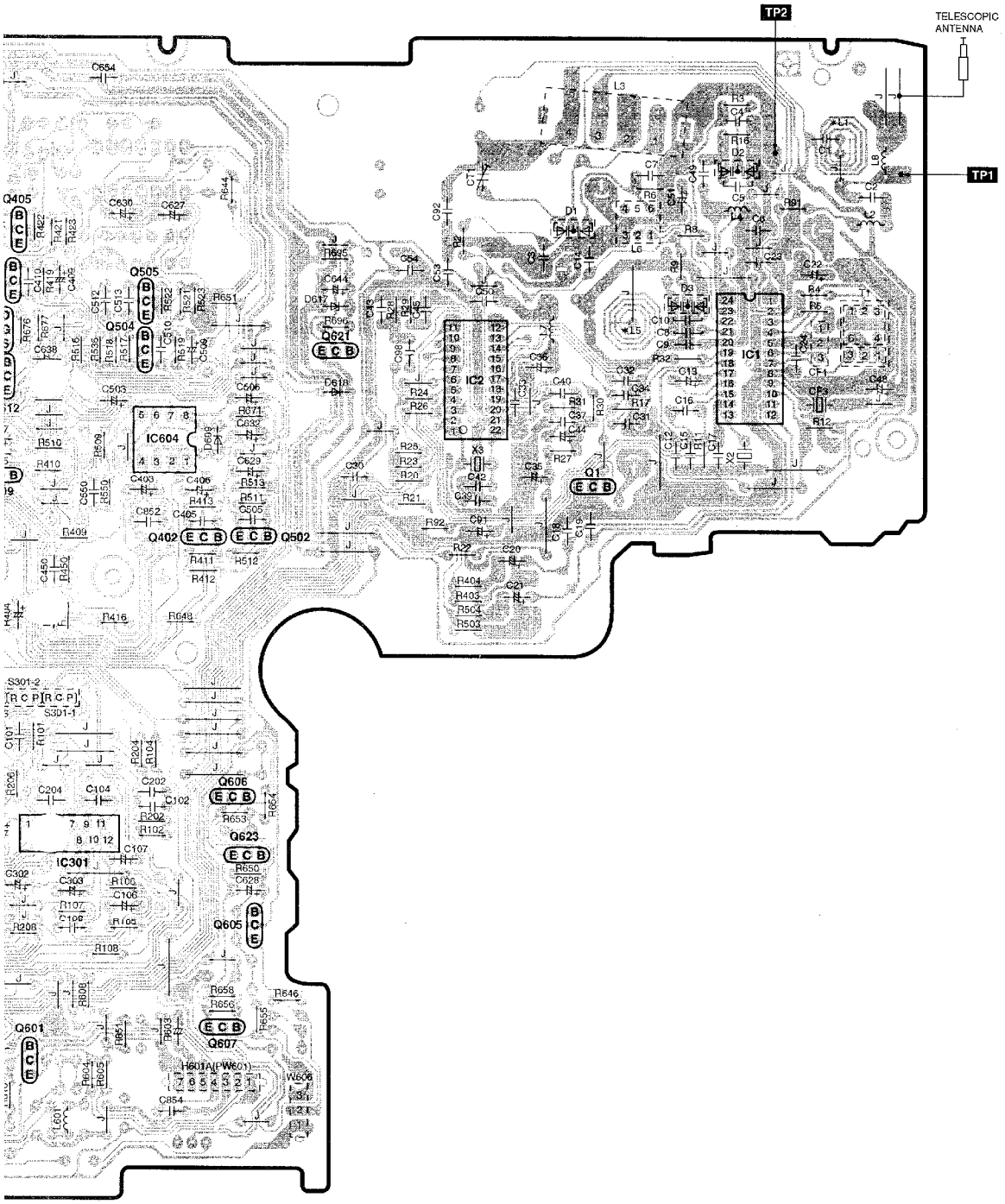


E LED P.C.B.

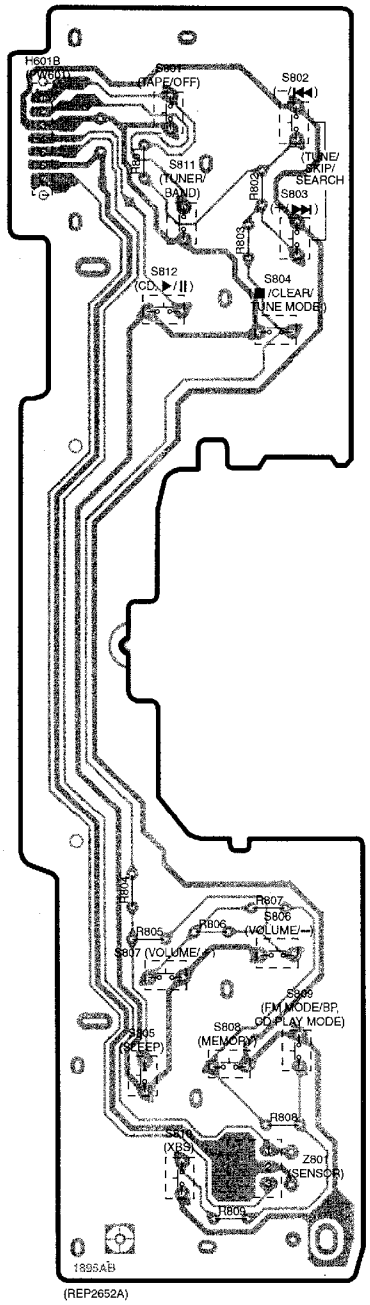


B MAIN P.C.B.

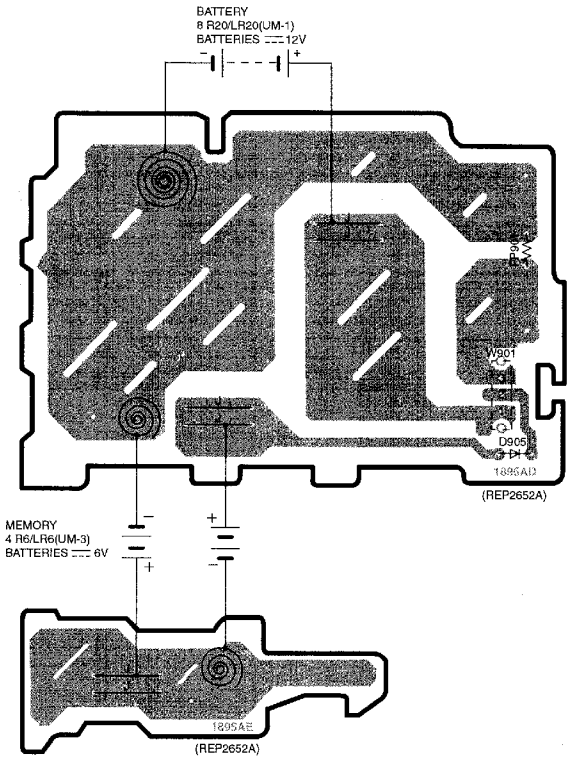

PHONES
IC603
IC604
IC605
IC606
IC601
IC602
IC301
Q614
Q622
Q406
Q615
Q617
Q405
Q506
Q518
Q404
Q505
Q613
Q504
Q612
Q401
Q501
Q409
Q509
Q610
Q616
Q611
Q608
Q609
Q302
Q624
Q301
Q511
Q411
Q603
Q604
Q601
Q402
TP20
TP21
1895AA
(REP2652A)


TP2
TELESCOPIC ANTENNA
TP1
IC1
IC2
IC301
IC604
Q1
Q402
Q502
Q405
Q505
Q504
Q621
Q606
Q623
Q605
Q601
Q607

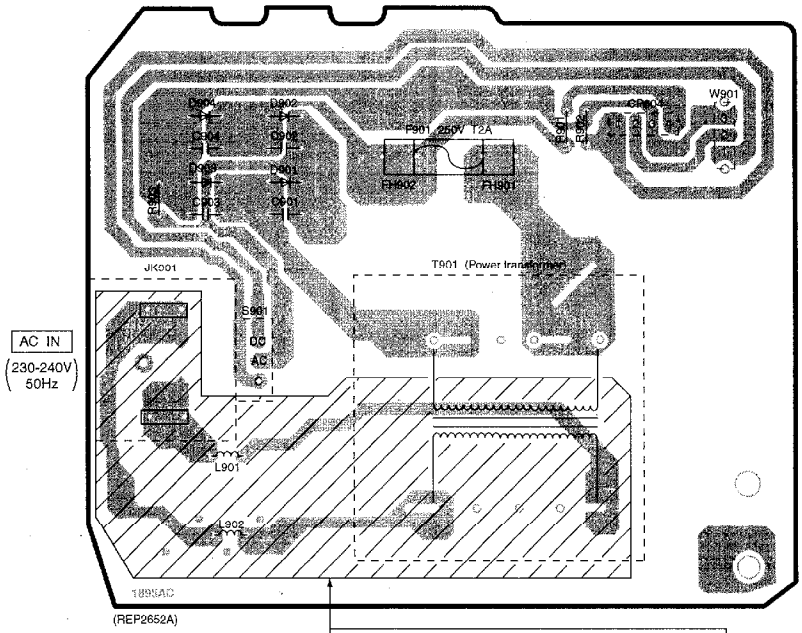
C OPERATION P.C.B.



F BATTERY TERMINAL P.C.B.

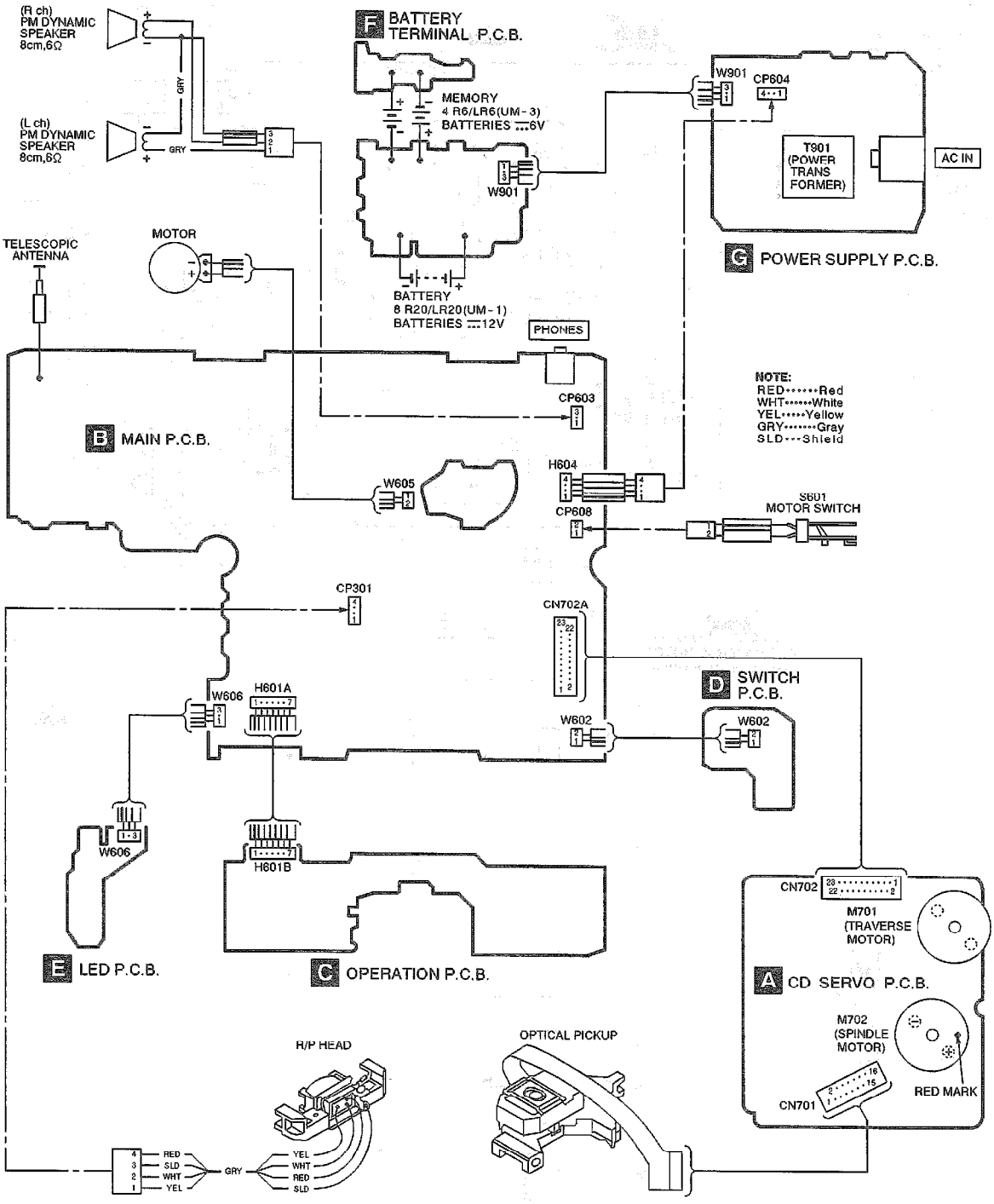


G POWER SUPPLY P.C.B.



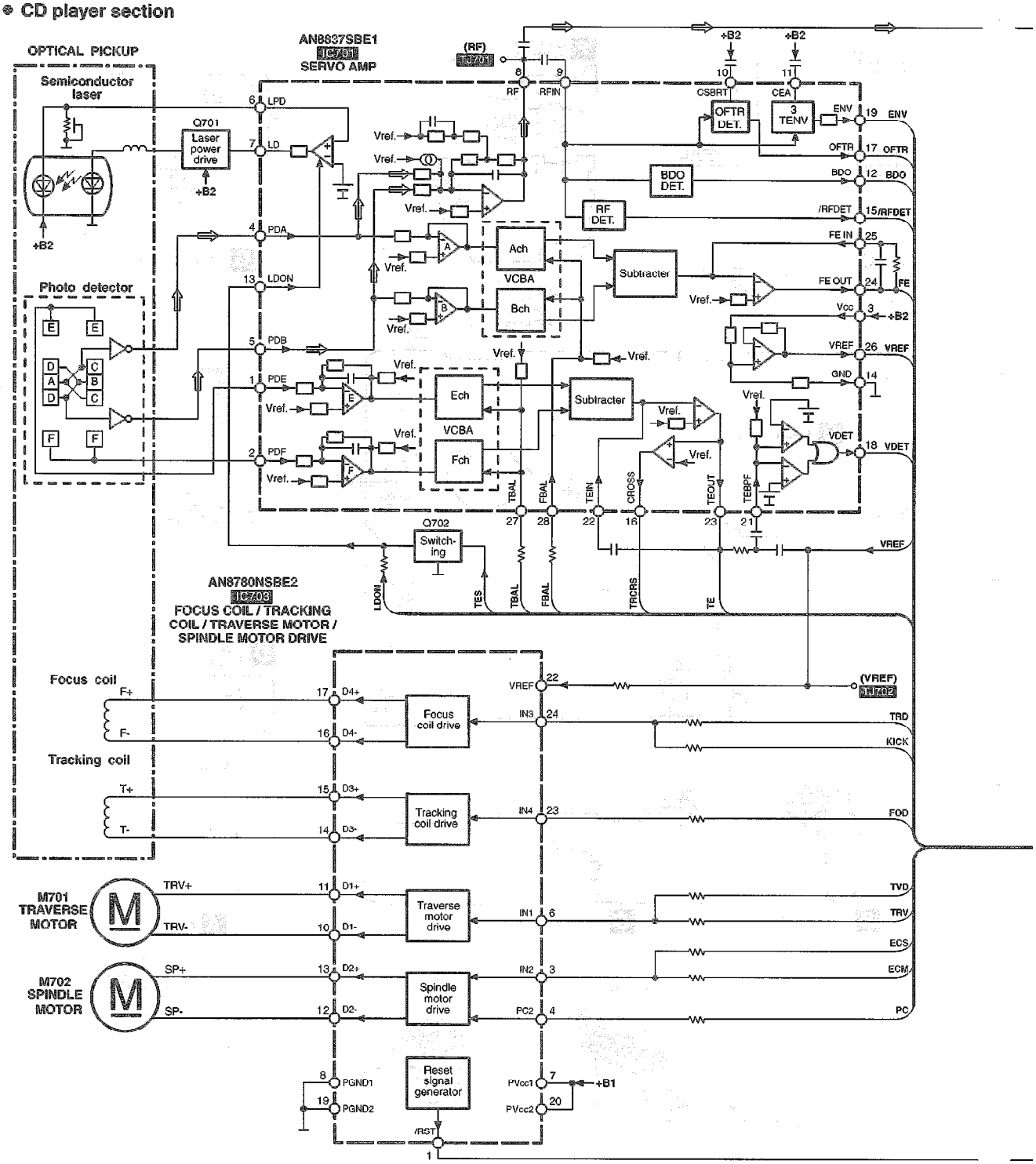
CAUTION
RISK OF ELECTRIC SHOCK AC voltage line.
Please do not touct this portion.

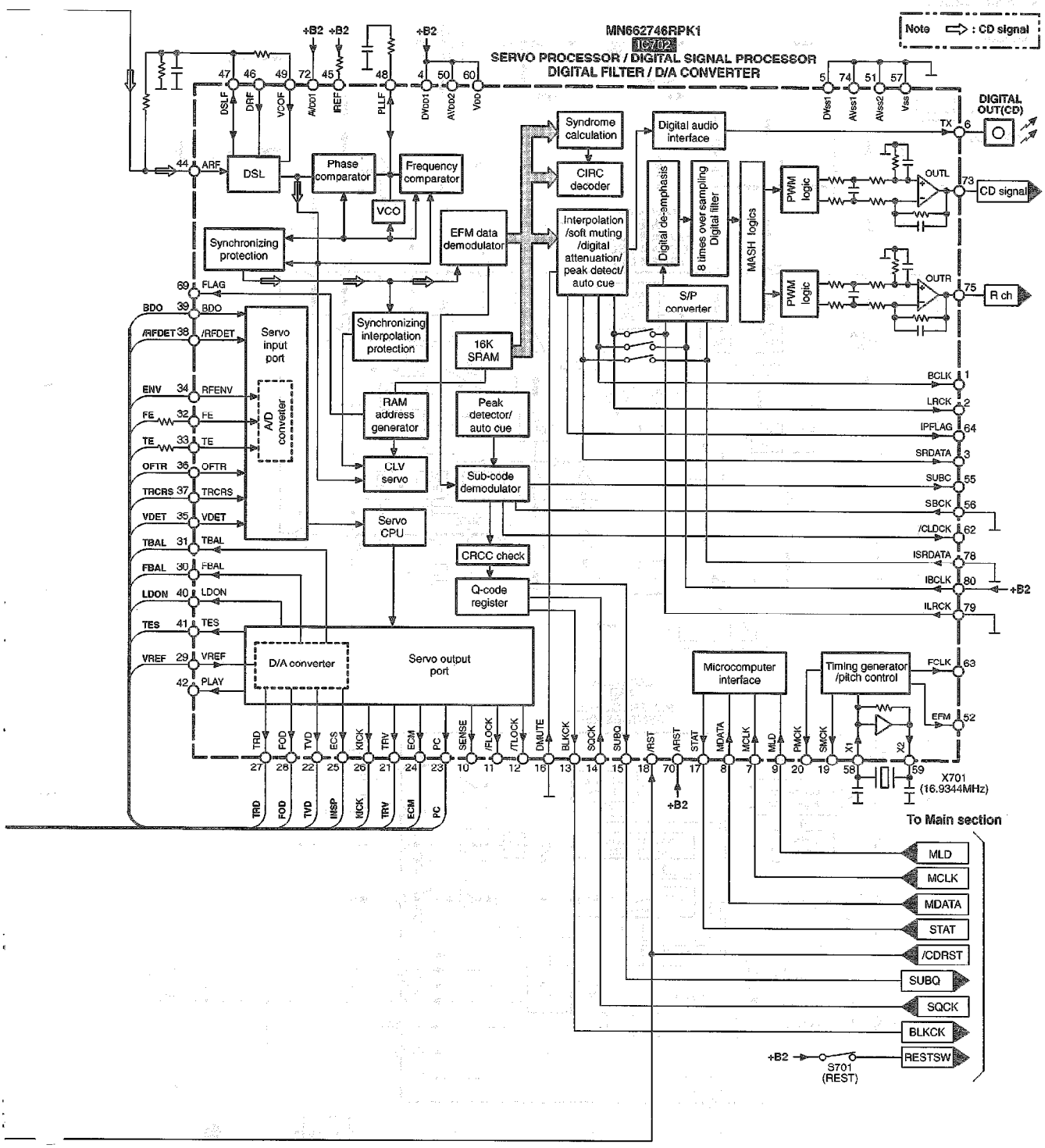
Wiring Connection Diagram



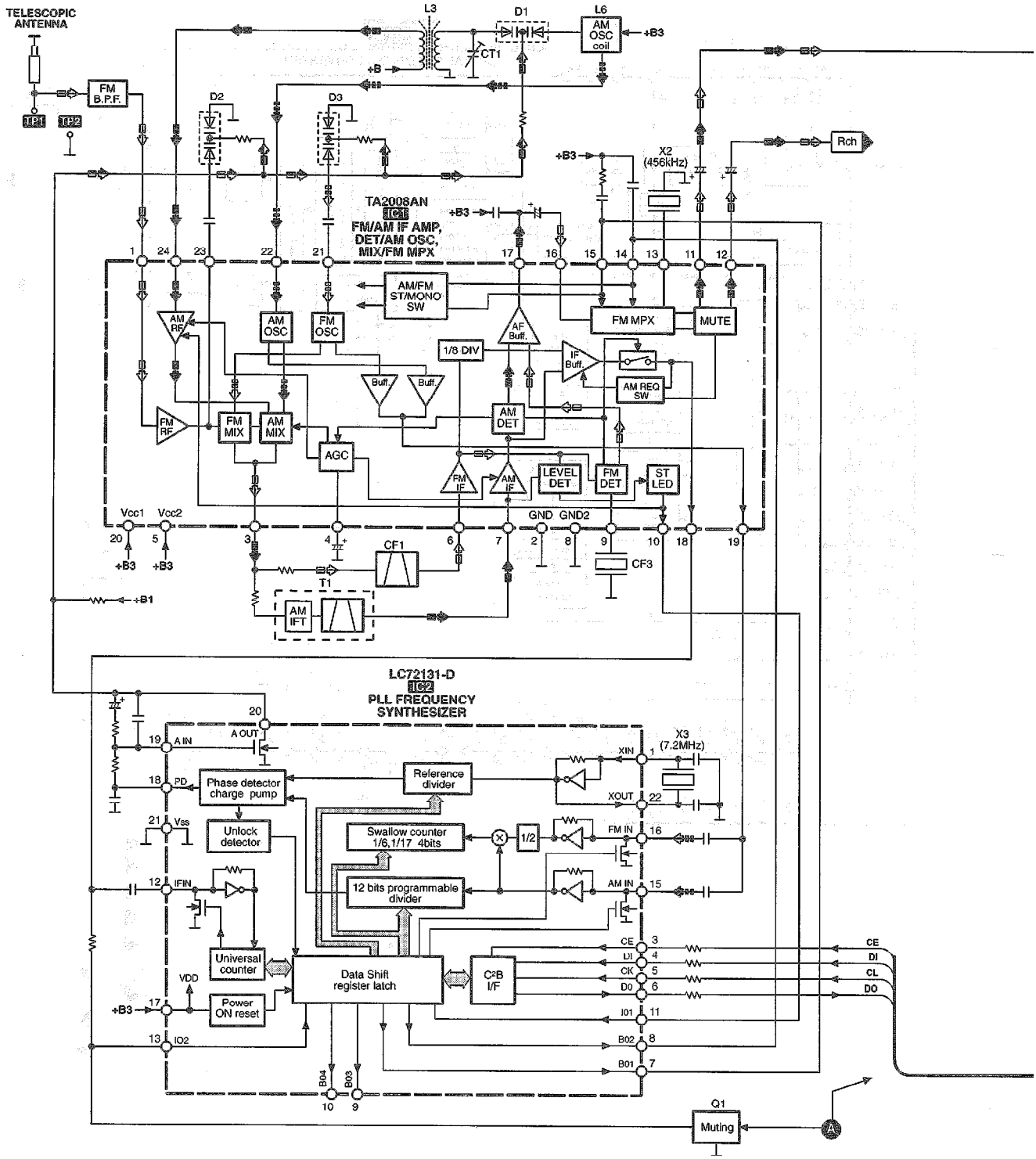
Block Diagram

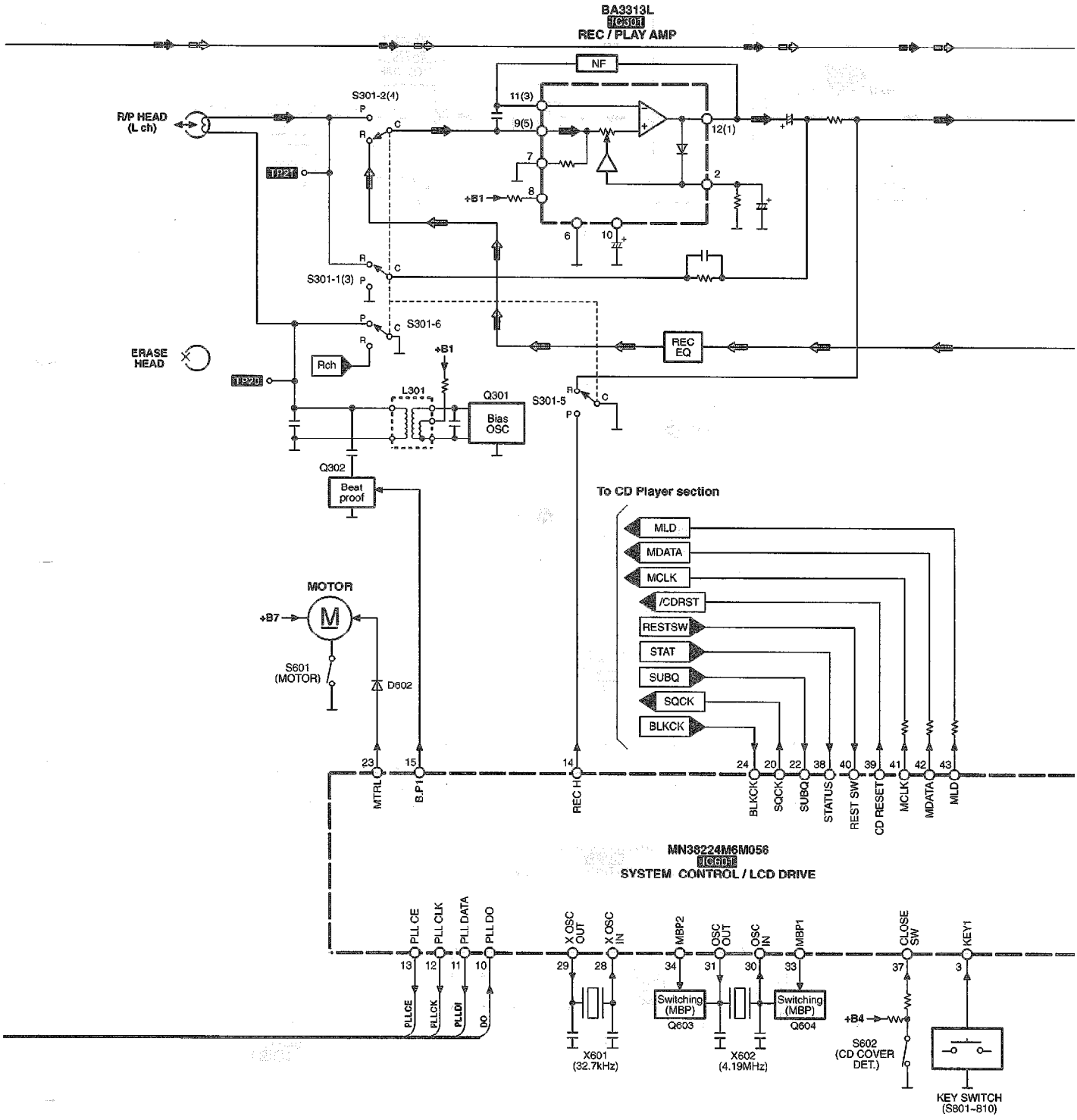
● CD player section

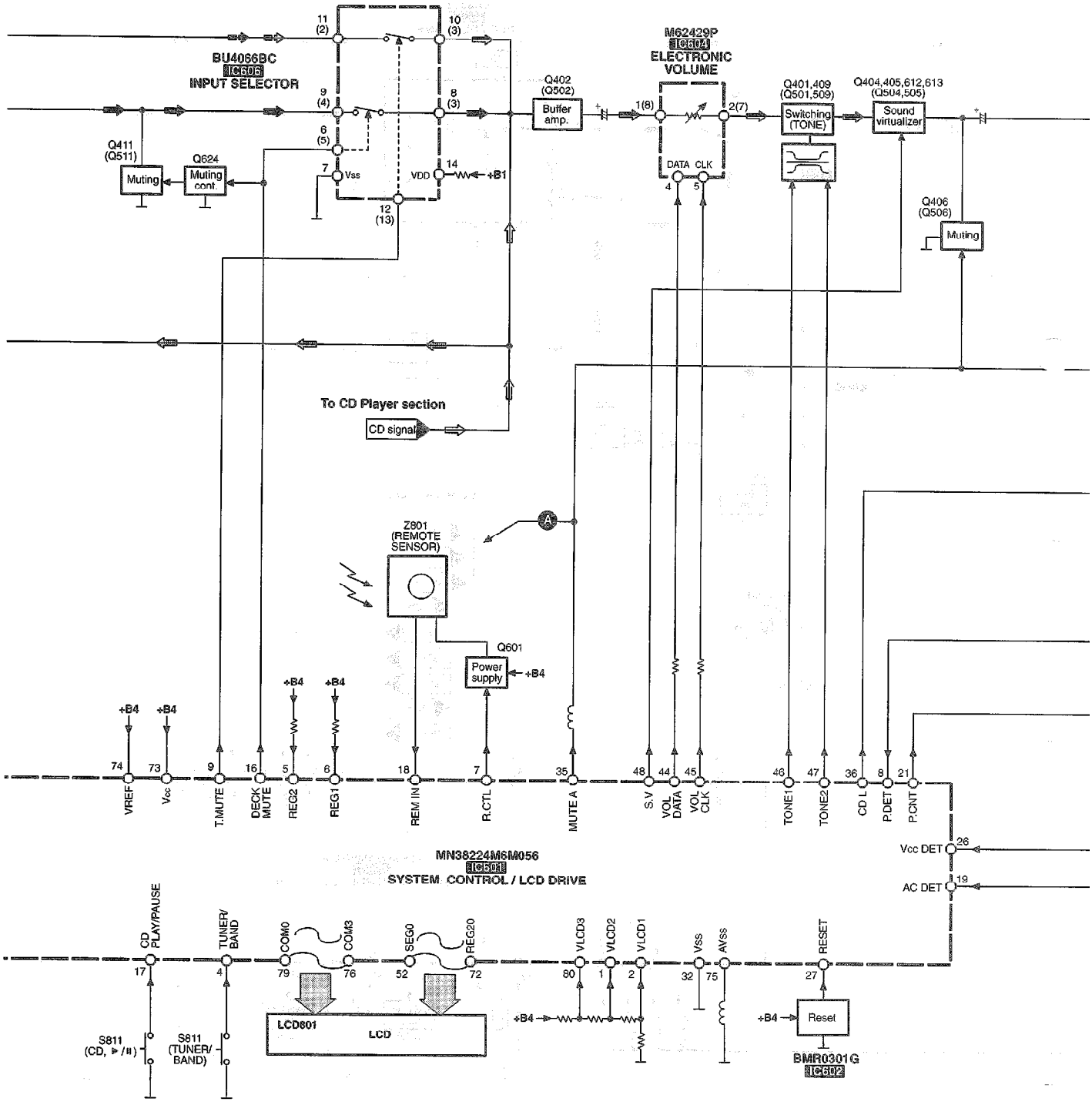


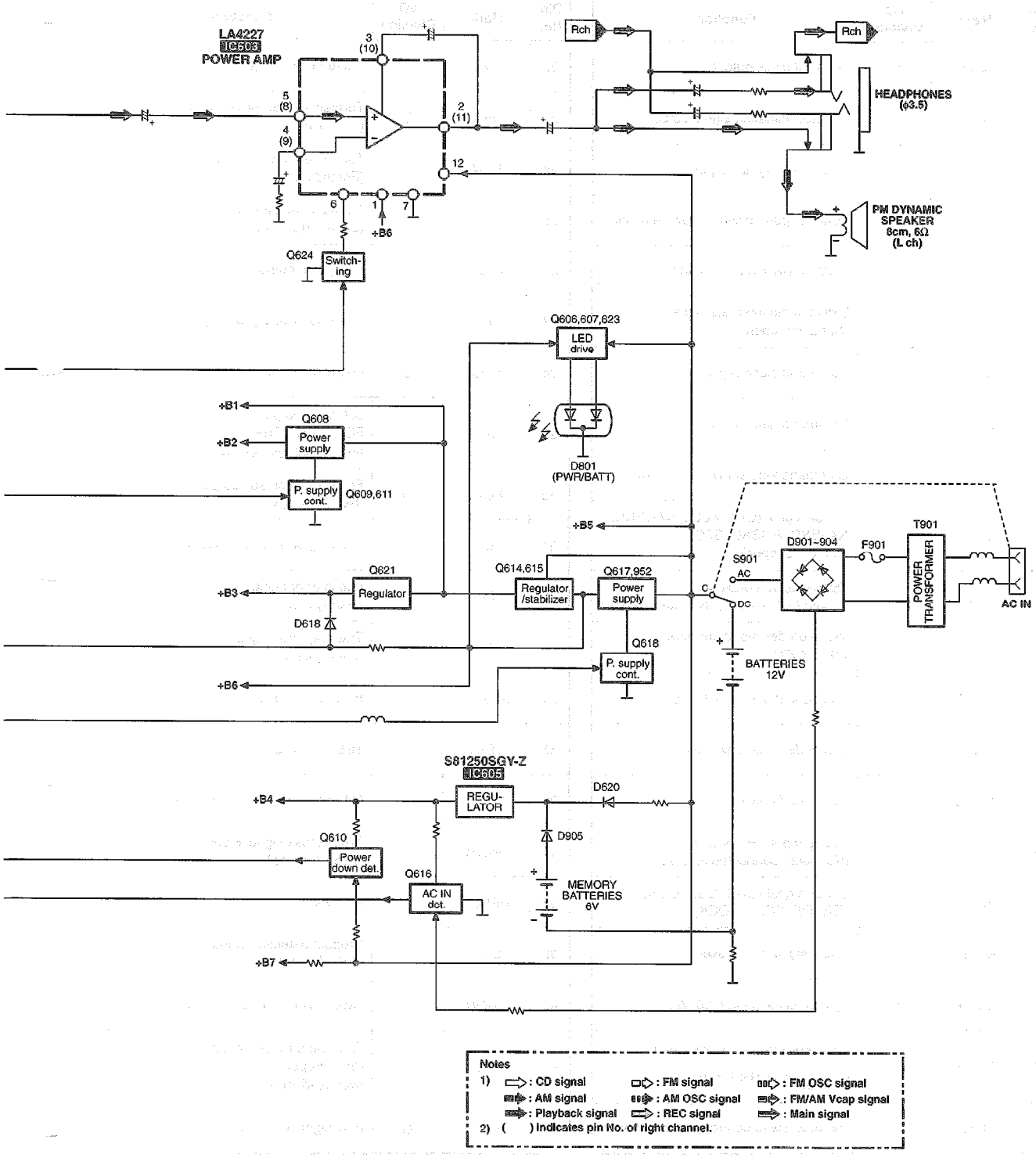

MN662746RPK1
IC702
SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER / D/A CONVERTER
Note : CD signal
+B2
DSL
Phase comparator
Frequency comparator
VCO
Synchronizing protection
EFM data demodulator
Syndrome calculation
CIRC decoder
Interpolation /soft muting /digital attenuation/ peak detect/ auto cue
Digital audio interface
Digital de-amphasis
8 times over sampling Digital filter
MASH logics
PWM logic
S/P converter
Synchronizing interpolation protection
16K SRAM
RAM address generator
Peak detector/ auto cue
CLV servo
Sub-code demodulator
Servo CPU
CRCC check
Q-code register
Servo input port
A/D converter
Servo output port
D/A converter
Microcomputer interface
Timing generator /pitch control
DIGITAL OUT(CD)
CD signal
R ch
X701 (16.9344MHz)
To Main section
MLD
MCLK
MDATA
STAT
/CDRST
SUBQ
SQCK
BLKCK
RESTSW
S701 (REST)

● Main section




BA3313L
IC301
REC / PLAY AMP
NF
S301-2(4)
R/P HEAD
(L ch)
11(3)
9(5)
12(1)
7
2
8
+B1
6
10
TP21
S301-1(3)
S301-6
ERASE
HEAD
Rch
TP20
L301
Q301
Bias
OSC
S301-5
REC
EQ
Q302
Beat
proof
To CD Player section
MLD
MDATA
MCLK
/CDRST
RESTSW
STAT
SUBQ
SQCK
BLKCK
MOTOR
+B7
M
S601
(MOTOR)
D602
23
15
14
24
20
22
38
40
39
41
42
43
MTRL
B.P1
REC H
BLKCK
SQCK
SUBQ
STATUS
REST SW
CD RESET
MCLK
MDATA
MLD
MN38224M6M056
IC601
SYSTEM CONTROL / LCD DRIVE
PLL CE
PLL CLK
PLL DATA
PLL DO
X OSC
OUT
X OSC
IN
MBP2
OSC
OUT
OSC
IN
MBP1
CLOSE
SW
KEY1
13
12
11
10
29
28
34
31
30
33
37
3
PLLCE
PLLCK
PLLDI
DO
Switching
(MBP)
Q603
Switching
(MBP)
Q604
X601
(32.7kHz)
X602
(4.19MHz)
+B4
S602
(CD COVER
DET.)
KEY SWITCH
(S801~810)


BU4066BC
IC603
INPUT SELECTOR
M62429P
IC604
ELECTRONIC VOLUME
Q402 (Q502)
Buffer amp.
Q401,409 (Q501,509)
Switching (TONE)
Q404,405,612,613 (Q504,505)
Sound virtualizer
Q411 (Q511)
Muting
Q624
Muting cont.
Vss
VDD
+B1
DATA
CLK
Q406 (Q506)
Muting
To CD Player section
CD signal
Z801 (REMOTE SENSOR)
Q601
Power supply
+B4
VREF
Vcc
T.MUTE
DECK MUTE
REG2
REG1
REM IN
R.CTL
MUTE A
S.V
VOL DATA
VOL CLK
TONE1
TONE2
CD L
P.DET
P.CNT
MN38224M6M056
IC501
SYSTEM CONTROL / LCD DRIVE
Vcc DET
AC DET
CD PLAY/PAUSE
TUNER/ BAND
COM0
COM3
SEG0
REG20
VLCD3
VLCD2
VLCD1
Vss
AVss
RESET
S811 (CD, ▶/II)
S811 (TUNER/ BAND)
LCD801
LCD
Reset
BMR0301G
IC602



Notes

1) ⇨: CD signal ⇨: FM signal ⇨: FM OSC signal
⇨: AM signal ⇨: AM OSC signal ⇨: FM/AM Vcap signal
⇨: Playback signal ⇨: REC signal ⇨: Main signal

2) ( ) Indicates pin No. of right channel.

Terminal Function of IC's

• IC702 (MN662746RPK1): Servo processor / Digital signal processor / Digital filter / D/A converter

Pin No.	Mark	I/O Division	Function
1	BCLK	O	Serial bit clock output
2	LRCK	O	L/R discriminating signal output
3	SRDATA	O	Serial data signal output
4	DV_{DD1}	I	Power supply (digital circuit) terminal
5	DV_{SS1}	I	GND (digital circuit) terminal
6	TX	—	Digital audio interface signal (Not used, open)
7	MCLK	I	Command clock signal
8	MDATA	I	Command data signal
9	MLD	I	Command load signal ("L" : LOAD)
10	SENSE	—	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open)
11	FLOCK	—	Optical servo condition (focus) ("L" : lead-in) (Not used, open)
12	VDET	—	Vibration det. signal terminal ("H" : DET)
13	BLKCK	O	Sub-code block clock (f=75 Hz)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	I	Muting input ("H" : MUTE) (Not used, connected to GND)
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
18	RESET	I	Reset signal ("L" : reset)
19	SMCK	O	System clock (f=4.2336 MHz)
20	PMCK	O	Frequency division clock signal ($f=\frac{1}{1.92}\times ck$=88.2 kHz)
21	TRV	O	Traverse servo control (Not used, open)

Pin No.	Mark	I/O Division	Function
22	TVD	O	Traverse drive signal
23	PC	O	Turntable motor drive signal ("L" : ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal
30	FBAL	O	Focus balance adj. output (Not used, open)
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	TEST terminal
36	OFTR	I	Off track signal ("H" : Off track)
37	TRCRS	I	Track cross signal input (TEST terminal)
38	RFDET	I	RF detection signal ("L" : detection)
39	BDO	I	Dropout detection signal ("H" : dropout)
40	LDON	O	Laser power control ("H" : ON)
41	TES	—	Tracking error shunt output ("H" : dropout) (Not used, open)
42	PLAY	O	Play signal ("H" : play)

Pin No.	Mark	I/O Division	Function
43	WVEL	—	Double velocity status signal ("H" : double) (Not used, open)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	—	DSL bias terminal (Not used, connected to GND)
47	DSLF	I / O	DSL loop filter terminal
48	PLLF	I / O	PLL loop filter terminal
49	DSLF2	O	DSL loop filter terminal
50	$AV_{DD}2$	I	Power supply (analog circuit) terminal (2)
51	$AV_{SS}2$	—	GND (analog circuit) terminal
52	CK384	O	384 CK (16.9344 MHz) output (Not used, open)
53	PCK	—	PLL extract clock (f=4.3218 MHz) (Not used, open)
54	CK176	O	176 CK (176.4 KHz) output (Not used, open)
55	SUBC	O	Sub-code serial output data (Not used, open)
56	SBCK	—	Sub-code serial input clock (Not used, connected to GND)
57	V_{SS}	—	GND terminal
58	X1	I	Crystal oscillator terminal (f=16.9344 MHz)
59	X2	O	
60	V_{DD}	I	Power supply terminal
61	TRVSTOP	O	Traverse motor stop control terminal
62	CLDCK	—	Sub-code frame clock signal (f CLDCK=7.35 kHz: Normal) (Not used, open)

Pin No.	Mark	I/O Division	Function
63	FCLK	—	Crystal frame clock (Not used, open)
64	IPFLAG	—	Interpolation flag terminal
65	FLAGO	—	Flag terminal
66	CLVS	—	Turntable servo phase synchro signal ("H" : CLV, "L" : Rough servo) (Not used, open)
67	CRC	—	Sub-code CRC check terminal ("H" : OK, "L" : NG) (Not used, open)
68	RESY	O	Flam synchro signal output
69	FLAG6	—	Flag terminal
70	ARST	I	A reset input terminal
71	TEST	I	Test terminal (Normal: "H")
72	$AV_{DD}1$	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Lch audio signal
74	$AV_{SS}1$	—	GND (analog circuit) terminal (1)
75	OUTR	O	Rch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	FSEL	I	Noise filter ON/OFF terminal (Not used, connected to GND)
78	ISRDATA	I	Serial data signal input
79	ILRCK	I	L/R discriminating signal input
80	IBCLK	I	Serial bit clock input

• IC701 (AN8837SBE1): Servo Amp.

No.	Terminal Name	I/O	Function
1	PDE	I	Tracking signal input terminal 1 (E ch)
2	PDF	I	Tracking signal input terminal 2 (F ch)
3	VCC	I	Power supply terminal
4	PDA	I	Focus signal input terminal 1 (A ch)
5	PDB	I	Focus signal input terminal 2 (B ch)
6	LPD	I	Laser PD signal
7	LD	O	Laser power auto control output
8	RF	O	RF amp terminal
9	RF IN	I	AGC input terminal
10	CSBRT	I	OFTR capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	BDO	O	Dropout detection control
13	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
14	GND	—	GND terminal
15	/RFDET	O	RF det. signal output terminal ("L": det.)
16	CROSS	O	Tracking error zero cross output
17	OFTR	O	Off track detection ("H": det.)
18	VDET	O	Oscillation det. signal ("H": det.)
19	ENV	O	Envelope signal output terminal
20	ENVOFF	I	Not used, connected to power supply
21	TEBPF	O	Oscillation detect input terminal
22	TEN	I	Tracking error signal
23	TEOUT	O	Tracking error signal
24	FEOUT	O	Focus error signal
25	FEN	I	Focusing error signal
26	VREF	O	Reference voltage output terminal
27	TBAL	I	Tracking balance adj. input
28	FBAL	I	Focus balance adj. input

• IC703 (AN8780NSBE2): Focus Coil / Tracking Coil / Traverse Motor / Spindle Motor Drive

No.	Terminal Name	I/O	Function
1	/RST	—	Not used, open
2	NC	—	———
3	IN2	I	Motor driver (2) input
4	PC2	I	Turntable motor drive signal ("L": ON)
5	NC	—	Not used, open
6	IN1	I	Motor driver (1) input
7	$PV_{CC}1$	I	Driver power supply terminal (1)
8	PGND1	—	Driver GND terminal (1)
9	NC	—	Not used, connected to GND
10	D1–	O	Motor driver (1) output terminal (–)
11	D1+	O	Motor driver (1) output terminal (+)
12	D2–	O	Motor driver (2) output terminal (–)
13	D2+	O	Motor driver (2) output terminal (+)
14	D3–	O	Motor driver (3) output terminal (–)
15	D3+	O	Motor driver (3) output terminal (+)
16	D4–	O	Motor driver (4) output terminal (–)
17	D4+	O	Motor driver (4) output terminal (+)
18	NC	—	Not used, open
19	PGND2P	—	Driver GND terminal (2)
20	$PV_{CC}2$	I	Driver power supply (2)
21	VCC	I	Power supply terminal
22	VREF	I	Reference voltage input terminal
23	IN4	I	Motor driver (4) input
24	IN3	I	Motor driver (3) input
25	RSTIN	I	Reset terminal (Not used, connected to GND)
26	NC	—	Not used, connected to GND

• IC601 (M38224M6M056): System Control / LCD Driver

Pin No.	Mark	I/O Division	Function
1	VLCD2	I	LCD bias reference voltage input V2
2	VLCD1	I	ICD bias reference voltage input V1
3	KEY1	I	KEY input 1
4	TUNER/BAND	I	TUNER/BAND key input
5	REG2	I	Area setting input 2
6	REG1	I	Area setting input 1
7	R.CTL	O	Remote control power control signal output
8	P.DET	I	SW Vcc voltage detection input
9	T.MUTE	O	TUNER FUNCTION & MUTE output
10	PLL DO	I	PLL IC DATA input
11	PLL DATA	O	PLL IC DATA output
12	PLL CLK	O	PLL IC CLK output
13	PLL CE	O	PLL IC CE output
14	REC H	O	REC detect signal output
15	B.P1	O	AM Rec. beat proof output 1
16	DECK MUTE	O	DECK MUTE output
17	CD PLAY/PAUSE	I	CD PLAY/PAUSE key input
18	REM IN	I	Remote control signal input
19	AC DET	I	AC Power detection input
20	SQCK	O	CD subcode clock output
21	P.CNT	O	Power control output
22	SUBQ	I	CD subcode data input
23	MTRL	I	Deck motor detection input
24	BLK CK	I	CD subcode block clock input
25	MEGA	–	Not used.
26	Vcc DET	I	Vcc detection input (main power detection)
27	RESET	I	System reset signal input
28	X OSC IN	I	Crystal oscillator input(32.768kHz)
29	X OSC OUT	O	Crystal oscillator output(32.768kHz)
30	OSC IN	I	Clock input(4.19MHz)
31	OSC OUT	I	Clock output(4.19MHz)

Pin No.	Mark	I/O Division	Function
32	Vss	–	GND
33	MBP1	O	Beatproof control signal output 1
34	MBP2	O	Beatproof control signal output 2
35	MUTE A	O	Audio Mute output A
36	CD L	O	CD power control output
37	CLOSE SW	I	CD close detection switch input
38	STAT	I	CD status signal input
39	CD RESET	O	CD reset signal output
40	REST SW	I	CD limit switch input
41	MCLK	O	CD clock control signal output
42	MDATA	O	CD data control signal output
43	MLD	O	CD loading control signal output
44	VOL DATA	O	PMW data signal output for electric volume circuit(IC604)
45	VOL CLK	O	PMW clock signal output for electric volume circuit(IC604)
46	TONE1	O	Tone control output 1
47	TONE2	O	Tone control output 2
48	S.V	O	Sound Virtualizer control output
49	NC	–	Not used.
|	|	|	|
51	NC	–	Not used.
52	SEG0	O	LCD segment signal output
|	|	|	|
72	SEG20	O	LCD segment signal output
73	Vcc	I	Power supply (+5V)
74	VREF	I	A/D converter reference voltage
75	AVss	–	GND
76	COM3	O	LCD common signal output
|	|	|	|
79	COM0	O	LCD common signal output
80	VLCD3	I	LCD bias reference voltage input V3

Measurements and Adjustments

< TUNER SECTION >

ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT
Measuring Condition 1. Set volume control to maximum. 2. Set power source voltage to 12V DC. 3. Output of signal generator should be no higher than necessary to obtain an output reading. Note : No AM IF and FM STEREO alignment are required.

AM-RF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 1)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	594 kHz	Tune to signal	Headphones Jack (32Ω) (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	L6 (AM OSC Coil)	Adjust for maximum output. Adjust L6 by moving coil along the ferrite core.
"	1503 kHz	"	"	CT1 (AM ANT Trimmer)	Adjust for maximum output.

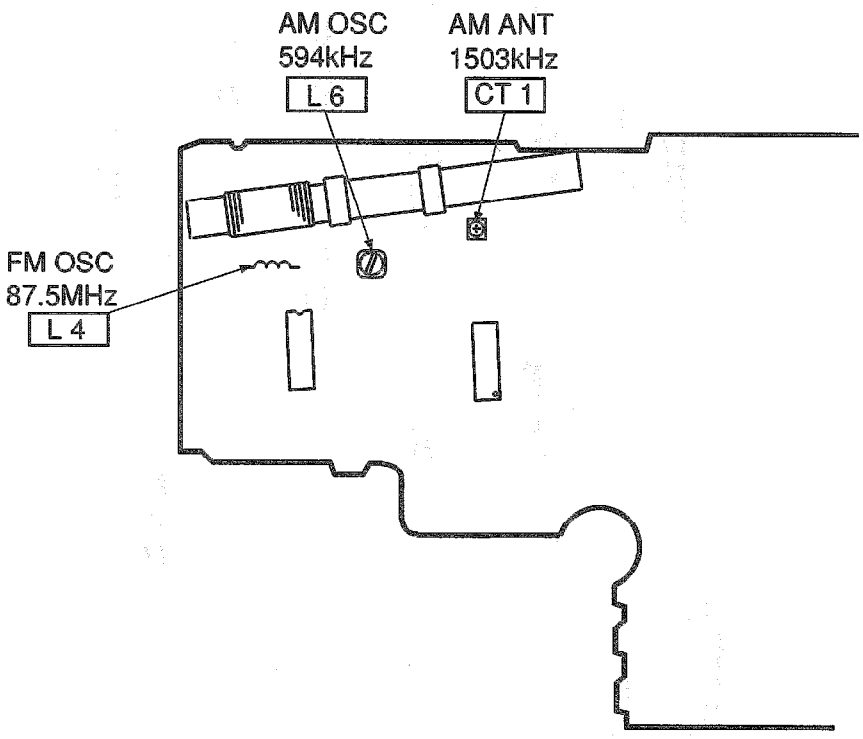
FM-RF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 1)	REMARKS
CONNECTIONS	FREQUENCY				
Connect to test point TP1 through FM dummy antenna. Negative side to test point TP2.	87.5 MHz	Tune to signal	Headphones Jack (32 Ω) [Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.]	L4 (FM OSC Coil)	Adjust for maximum output.

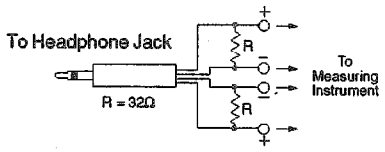
< CASSETTE DECK SECTION >

Notes: • No tape speed alignment are required.
• No azimuth head alignment is required due to Aztec Head is used in the cassette mechanism.

■ ALIGNMENT POINTS

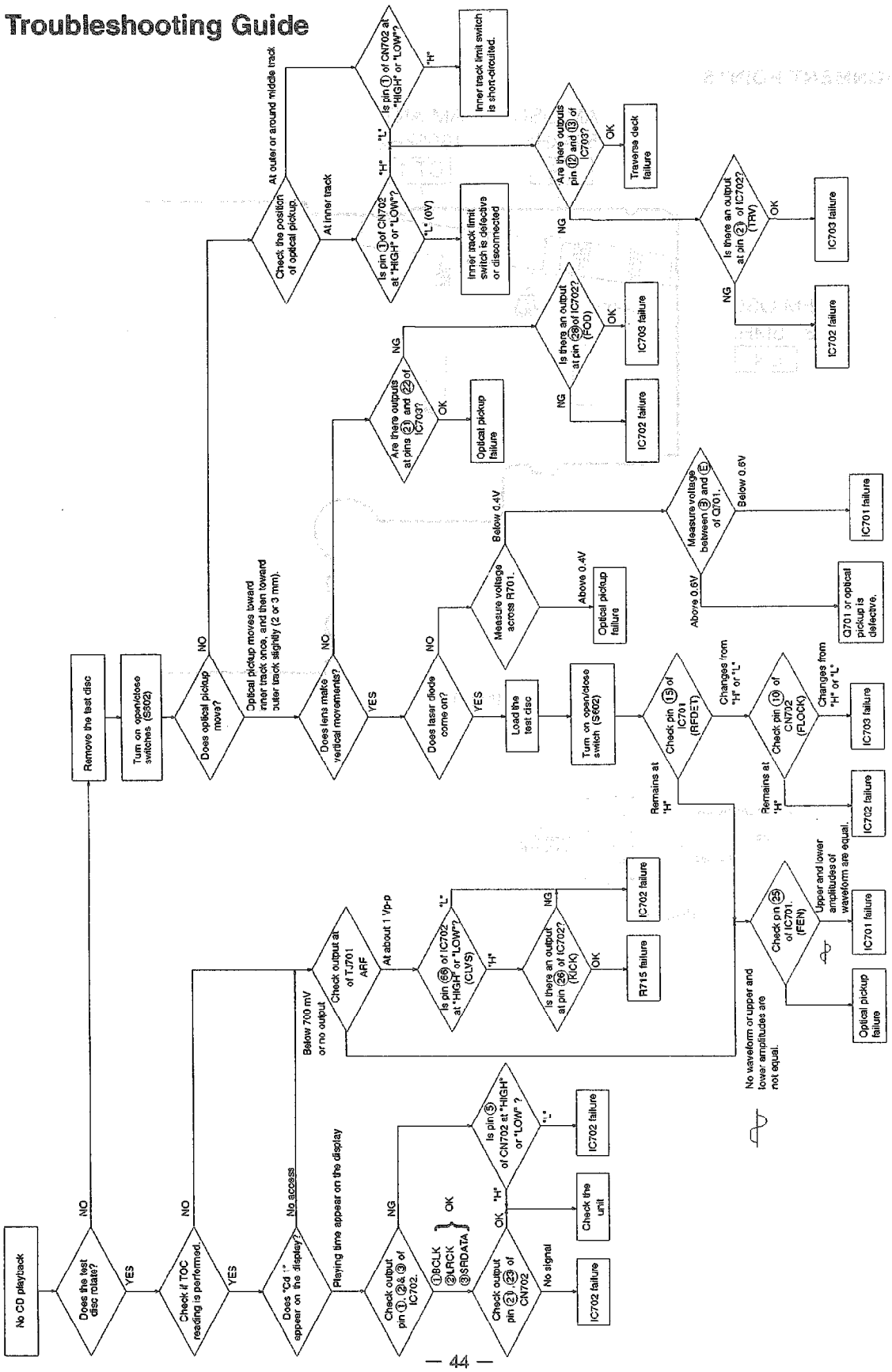


(Fig. 1)

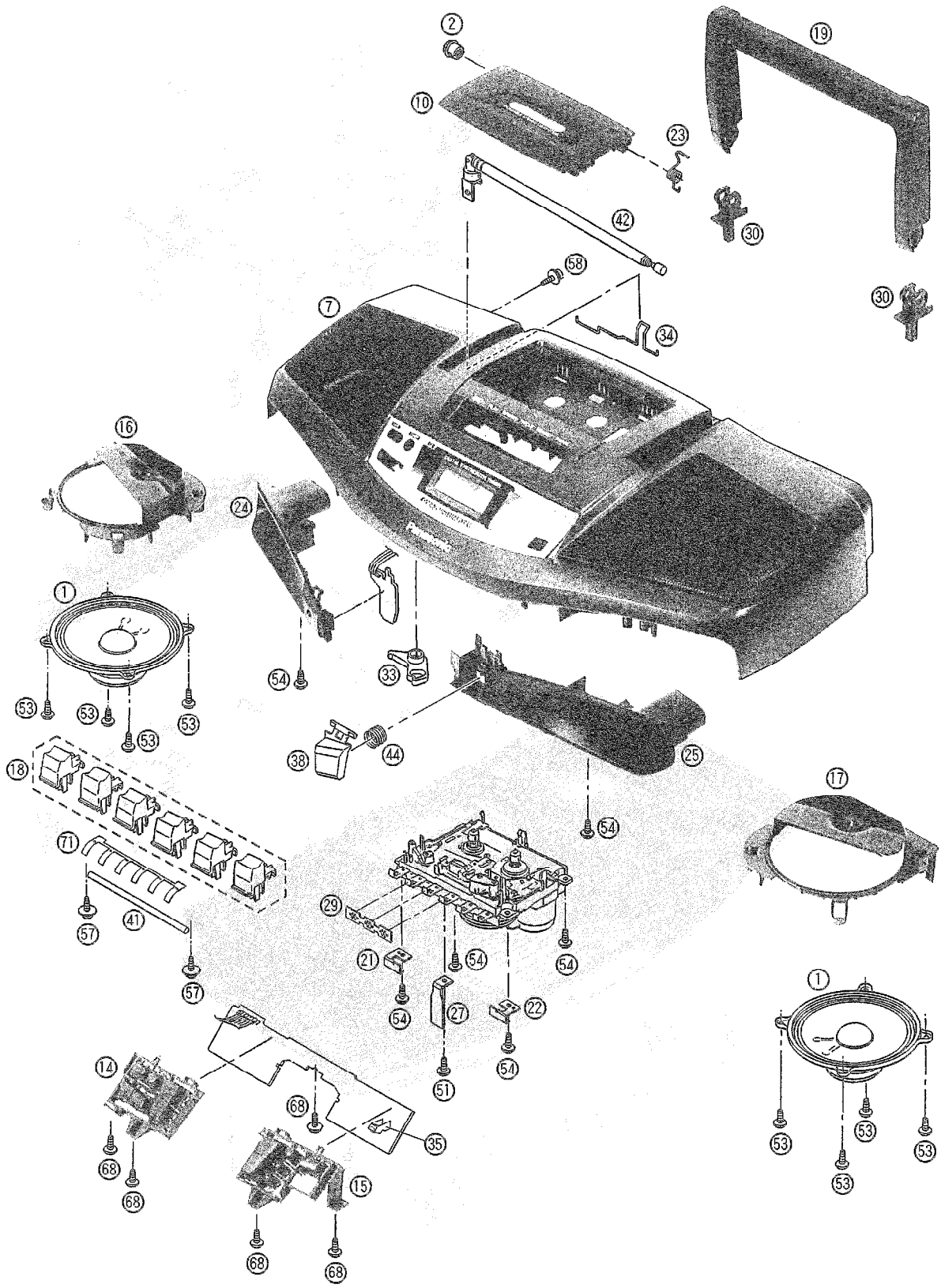


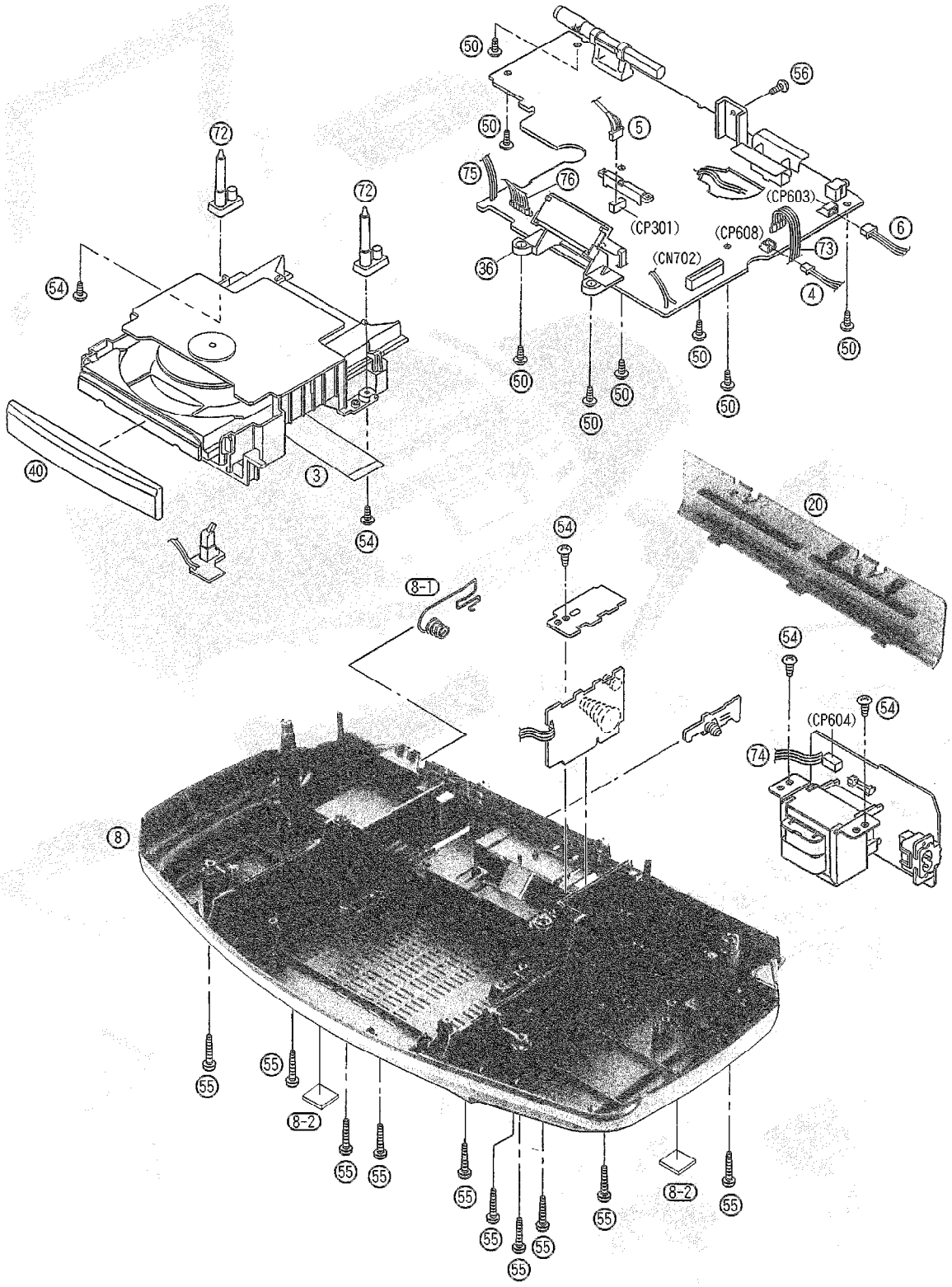
(Fig. 2)

Troubleshooting Guide

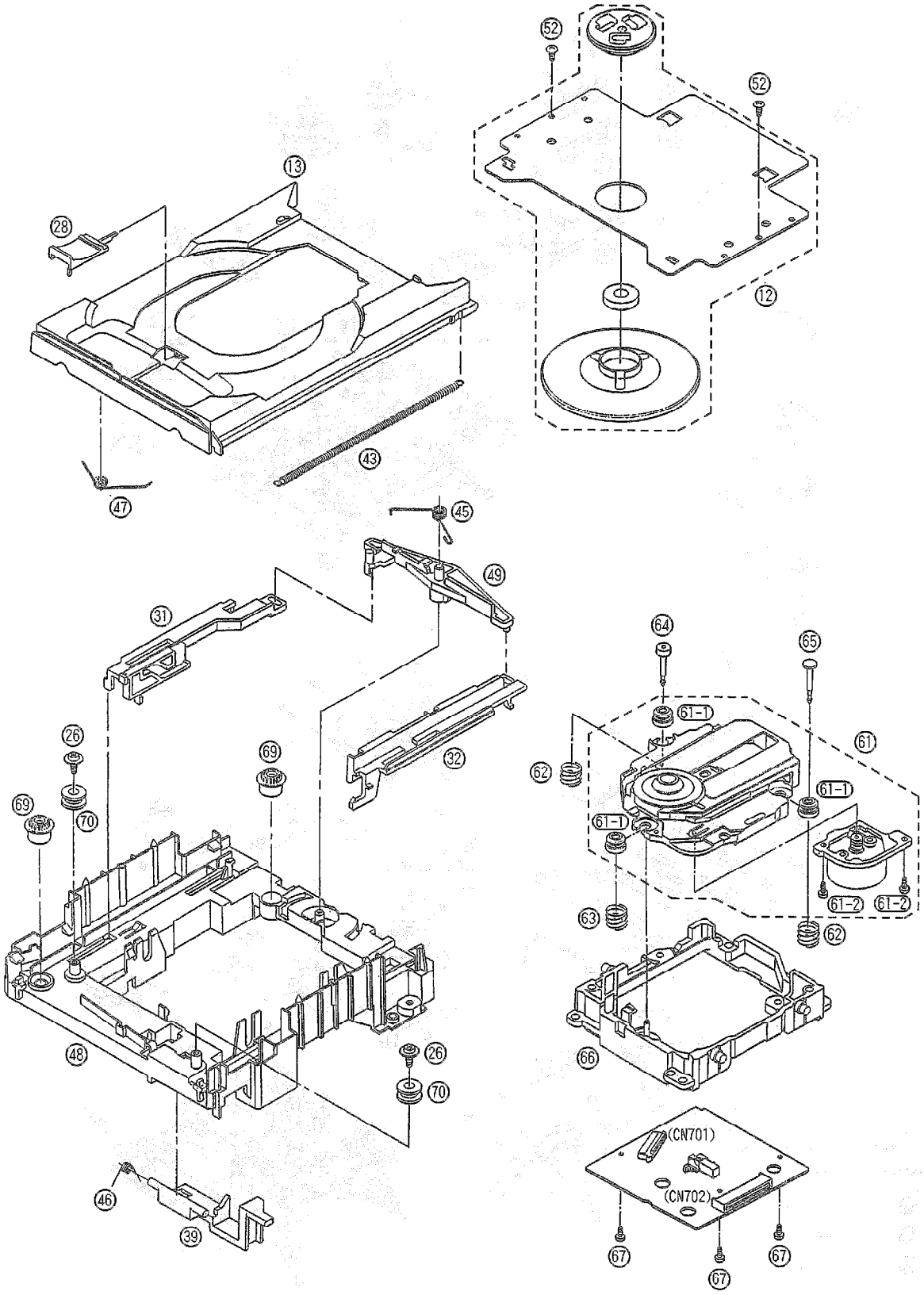


Cabinet Parts Location

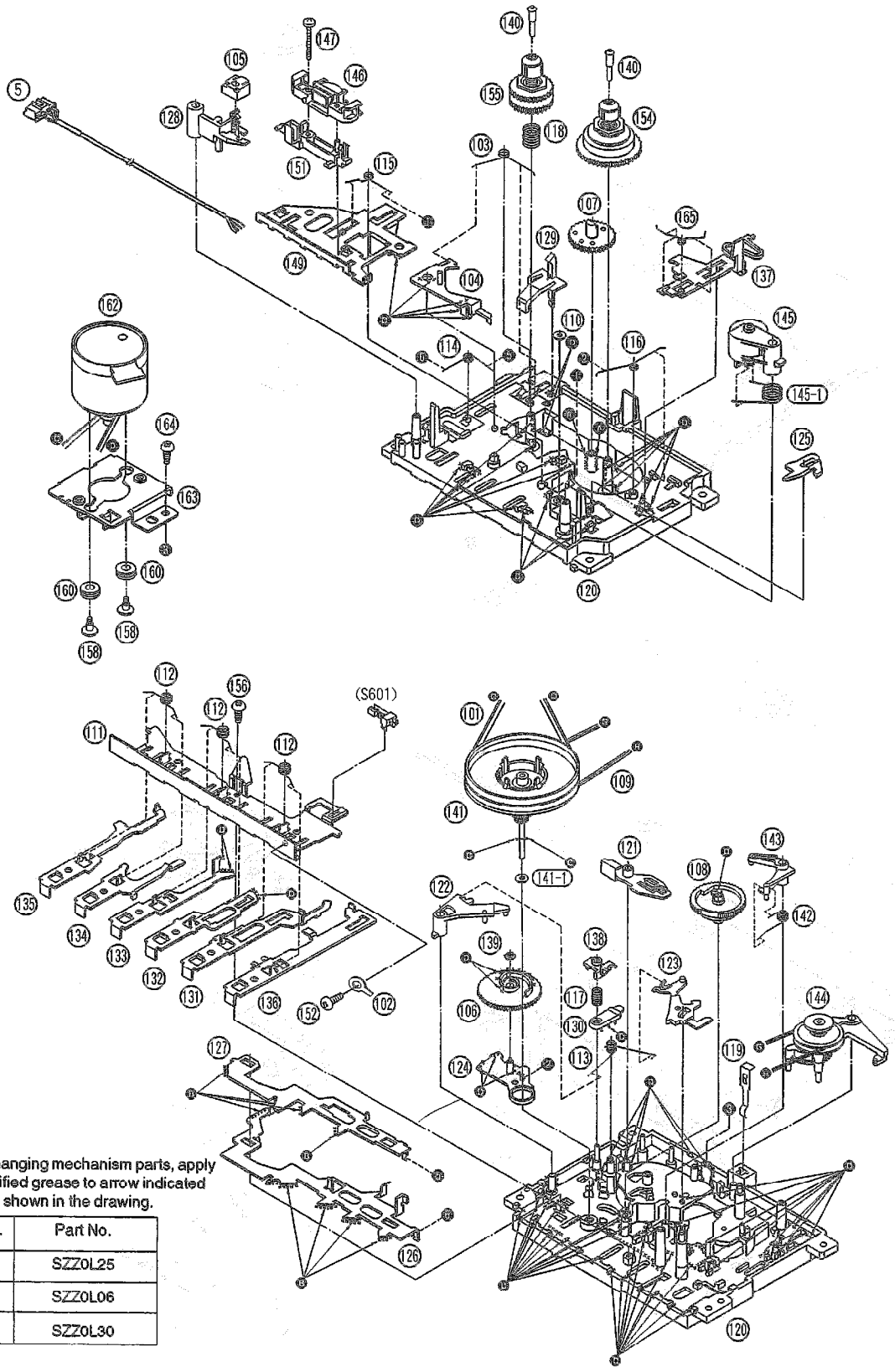



(CP603)
(CP301)
(CP608)
(CN702)
(CP604)
8-1
8-2

Loading Unit Parts Location



Mechanism Parts Location



Note:
When changing mechanism parts, apply the specified grease to arrow indicated areas as shown in the drawing.

Ref No.	Part No.
Ⓐ	SZZ0L25
Ⓑ	SZZ0L06
Ⓓ	SZZ0L30

Replacement Parts List

Notes:

- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
  When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
- The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
  Parts without these indications can be used for all areas.
- Remoto Control Ass'y : Supply period for three years from termination of production.
- Warning : This product uses a laser diode.
  Refer to caution statements on page 2, 3.
- ACHTUNG : Die lasereinheit nicht zerlegen.
  Die lasereinheit dart nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.
- Capacity values are in microfarads (μ F) unless specified other wise,
  P = Pico-farads (pF) F = Farads (F)
- Resistance values are in ohms, unless specified otherwise,
  1K = 1,000 (OHM), 1M = 1,000k (OHM)
- The "<IA>, <IB>, <IC>, <ID>, <IE>" marks in Remarks indicate language of instruction manual.
  <IA> : English, Spanish, Swedish
  <IB> : Russian, Spanish, Czeco
  <IC> : German, Italian, French
  <ID> : Duch, Danish
  <IE> : English

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RAS10P20-H	SPEAKER	2	
2	RDG0183-L	DAMPER GEAR	1	
3	REE0842	CD FFC	1	
4	REX0905Y	MECHA LEAF SW WIRE.U	1	
5	REX0906	MECHA HEAD WIRE UNIT	1	
6	REX0907	SP-MAIN WIRE UNIT	1	
7	RFKKXDS18EBK	UPPER CABINET ASS'Y	1	
8	RFKJXDS18EBK	BOTTOM CABINET ASS'Y	1	(EB)
8	RFKJXDS18EGK	BOTTOM CABINET ASS'Y	1	(EG)
8	RFKJXDS18EK	BOTTOM CABINET ASS'Y	1	(E)
8-1	RJC91008	BATTERY TERMINAL(+/-)	1	
8-2	RKA0059-K	LEG RUBBER	2	
10	RFKLXDS27EBK	CASSETTE LID ASS'Y	1	
12	RFKNRXDS18PA	DISC HOLDER ASS'Y	1	
13	RGQ0233-K	DISC TRAY	1	
14	RGU1631-H	OPR. BUTTON (L)	1	
15	RGU1632-H	OPR. BUTTON (R)	1	
16	RGK1006-K	DIFFUSER (L)	1	
17	RGK1007-K	DIFFUSER (R)	1	
18	RGZX0025-K	MECHA BUTTON	1	
19	RKH0042-K	HANDLE	1	
20	RKK0073-K	BATT. COVER	1	
21	RMAX0028	MECHA BRACKET (L)	1	
22	RMAX0029	MECHA BRACKET (R)	1	
23	RMB0490	CASS. OPEN SPRING	1	
24	RKT0040-K	PORT (L)	1	
25	RKT0041-K	PORT (R)	1	
26	RHD26016	SCREW	2	
27	RMC0355	R/P PLATE	1	
28	RGQ0234-K	DISC HOLD PIECE	1	
29	RMXX0004	SPACER	1	
30	RKQ0224-K	HANDLE FIXTURE	2	
31	RMM0205	UP/DOWN LEVER A	1	
32	RMM0206	UP/DOWN LEVER B	1	
33	RML0534	R/P LEVER	1	
34	RME0270	R. ANT TERMINAL	1	
35	RMN0417	REMOCON SHIELD	1	
36	RMN0475	LCD HOLDER	1	
38	RGU1630-K	CD EJ BUTTON	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
39	RML0535	CD LOCK LEVER	1	
40	RGK1008-K	CD TRAY LID	1	
41	SUX102	MECHA ROD	1	
42	XEARR210C-Y	R.ANTENNA	1	
43	RMB0566	CD OPEN SPRING	1	
44	RMB0567	CD EJ BTN SPR	1	
45	RME0267	ASSIST SPRING	1	
46	RME0268	CD EJ LEV SPR	1	
47	RME0269	DISC HOLD PIECE SPRING	1	
48	RMK0388	CD CHASSIS	1	
49	RMM0207	CHANGE LEVER	1	
50	XTBS26+10J	SCREW	8	
51	XTN2+3F	SCREW	1	
52	XTV26+6G	SCREW	2	
53	XTV3+10G	SCREW	8	
54	XTV3+12G	SP. MOUNTING SCREW	11	
55	XTV3+20G	CASING SCREW	10	
56	XTV3+8F	SCREW	1	
57	XTWS3+10Q	MECHA SHAFT SCREW	2	
58	XYN3+F12FY	R.ANT SCREW	1	
61	RAE0152Z	TRAVERSE	1	
61-1	SHGD113-1	FLOATING CUSHION	3	
61-2	SNSD38	TRV MOTOR ASS'Y SCREW	2	
62	RME0109	FLOATING SPRING B	2	
63	RME0142	FLOATING SPRING A	1	
64	RMS0350	FIXED PIN A	1	
65	RMS0123-1	FIXED PIN B	1	
66	RMR0698-K	TRY CHASSIS	1	
67	XTN2+6G	PCB SCREW	3	
68	XTWS26+10Q	SCREW	5	
69	RDG0183-L	DAMPER GEAR	2	
70	RDP0103	ROLLER	2	
71	RMQ0649	MECHA BUTTON SUPPORT	1	
72	RMR1155-K	CD FIXTURE	2	
73	REX0908	FLAT CABLE(4P) (PW604)	1	
74	RWJ0103170KK	FLAT CABLE(3P) (PW901)	1	
75	RWJ8203120KK	FLAT CABLE(3P) (W6U6)	1	
76	RWJ8207110RR	FLAT CABLE(7P) (PW601)	1	
101	RDV0007	MAIN BELT	1	
102	RJR0033	EARTH LUG	1	
103	RMB0109-1	BRAKE SPRING	1	
104	RML0116	BRAKE	1	
105	RBR2CY009	ERASE HEAD	1	
106	RDG0057	IDLER GEAR	1	
107	RDG0059	FF RELAY GEAR	1	
108	RDK0005	CAM GEAR	1	
109	RDV0006-1	RF BELT	1	
110	RHW16009	CAPSTAN WASHER	1	
111	RMA0109	BACK PLATE	1	
112	RMB0043-1	ROD OPERATION SPRING	1	
113	RMB0045	AS SPRING	1	
114	RMB0046-1	LOCK PLATE SPRING	1	
115	RMB0047	HEAD PANEL SPRING	1	
116	RMB0048	IDLER LEVER SPRING	1	
117	RMB0053	PAUSE LEVER SPRING	1	
118	RMB0125	BACK TENSION SPRING	1	
119	RMC0061	PACK SPRING(OR RUS6O	1	
120	RFKRCT090P-K	CHASSIS ASS'Y	1	
121	RML0071	SWING LEVER	1	
122	RML0072	AS RELEASE LEVER	1	
123	RML0073-1	AS PROTECT LEVER	1	
124	RML0074	IDLER LEVER	1	
125	RML0076	EJECT SELECTION LEVE	1	
126	RML0077	LOCK PLATE	1	
127	RML0078	FUNCTION PLATE	1	
128	RML0080-1	ERASE HEAD ARM	1	
129	RML0081-1	RECORD SAFETY LEVER	1	
130	RML0082	PAUSE LEVER	1	
131	RMM0023	PLAY ROD	1	
132	RMM0024	REW ROD	1	
133	RMM0025	FF ROD	1	
134	RMM0026	STOP ROD	1	
135	RMM0027	PAUSE ROD	1	
136	RMM0028	REC ROD	1	
137	RMM0029	EJECT SLIDE LEVER	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
138	RMR0211	PAUSE BUSH	1	
139	RMR0227	IDLER GEAR BUSH	1	
140	RMS0055	REEL SHAFT	1	
141	RXF0012	FLYWHEEL ASSY	1	
141-1	RHW2100B	FLYWHEEL WASHER	1	
142	RMB0044	TRIGGER SPRING	1	
143	RML0075	TRIGGER LEVER	1	
144	RXP0014	RF CLUTCH ASSY	1	
145	RXP0015	PINCH ROLLER ASSY	1	
145-1	RMB0049	PINCH ARM SPRING	1	
146	RBR4CY016-M	STEREO ASTEC HEAD	1	
147	XTN2+14F	R/P HEAD SCREW	1	
149	RMA0696	HEAD BASE	1	
151	RMQ03A4	HEAD BASE	1	
152	XTN2+4F	SCREW	1	
154	RXR0004	TAKE UP REEL ASSY	1	
155	RXR0005	SUPPLY REEL ASSY	1	
156	XTN2+6J	BACK PLATE SCREW	1	
158	RHD26002	MOTOR SCREW	1	
160	RMG0102	MOTOR RUB. CUSH.	1	
162	RFKPXDS101PK	DC MOTOR ASS'Y	1	
163	RMA0108	MOTOR BK (P:75)	1	
164	XTN26+8J	MOTOR BK SCREW	1	
165	RME0098-2	EJECT SLIDE LEVER SP	1	
A1	EUR646550	REMOTE CONTROL	1	
A1-1	URG4EC2112	R/C BATTERY COVER	1	
A2	RQT4247-E	O/I BOOK	1	(E)<1A>
A2	RQT4248-R	O/I BOOK	1	(E)<1B>
A2	RQT4249-D	O/I BOOK	1	(EG)<1C>
A2	RQT4250-H	O/I BOOK	1	(EG)<1D>
A2	RQT4251-B	O/I BOOK	1	(EB)<1E>
A3	RJA0019-2K	AC CORD	1	(EG,E)
A3	VJA0733	AC CORD	1	(EB)
C1	ECBT1H470J5	50V 47P	1	
C2	ECBT1H100JC5	50V 10P	1	
C3	ECFR1C223MR	16V 0.022	1	
C4	ECBT1H102KB5	50V 1000P	1	
C5	ECBT1H5R6KC5	50V 5.6P	1	
C6	ECBT1H102KB5	50V 1000P	1	
C7	ECBT1H150JC5	50V 15P	1	
C8,C9	ECBT1H102KB5	50V 1000P	2	
C10	ECBT1H100JC5	50V 10P	1	
C12	ECBT1H331KB5	50V 330P	1	
C13	ECA1CM100B	16V 10	1	
C14	ECBT1H102KB5	50V 1000P	1	
C15	ECFR1C683MR	16V 0.068	1	
C16,17	ECFR1C823MR	16V 0.082	2	
C18,19	ECFR1C333MR	16V 0.033	2	
C20,21	ECA1HM010B	50V 1	2	
C22	ECA1HM4R7B	50V 4.7	1	
C23,24	ECFR1C333MR	16V 0.033	2	
C30	ECBT1H331KB5	50V 330P	1	
C31	ECBT1C103MS5	16V 0.01	1	
C32-34	ECBT1H102KB5	50V 1000P	3	
C35	ECA1CM101B	16V 100	1	
C36	ECA1EM101B	25V 100	1	
C37	ECBT1C103MS5	16V 0.01	1	
C39	ECBT1H180JC5	50V 18P	1	
C40	ECBT1C222MR5	16V 2200P	1	
C42	ECBT1H330J5	50V 33P	1	
C43	ECBT1H101KB5	50V 100P	1	
C44	ECA1HM2R2B	50V 2.2	1	
C45	ECBT1H102KB5	50V 1000P	1	
C48	ECA1HM010B	50V 1	1	
C49,50	ECBT1H102KB5	50V 1000P	2	
C51	ECA1HM010B	50V 1	1	
C53,54	ECBT1H102KB5	50V 1000P	2	
C91	ECA1HM3R3B	50V 3.3	1	
C92	ECBT1H331KB5	50V 330P	1	
C98	ECBT1H331KB5	50V 330P	1	
C101	ECBT1C122MR5	16V 1200P	1	
C102	ECBT1C332MR5	16V 3300P	1	
C104	ECBT1H681KB5	50V 680P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C106	ECA1CM101B	16V 100	1	
C107	ECA1CM100B	16V 10	1	
C108	ECBT0J223MS5	6.3V 0.022	1	
C201	ECBT1C122MR5	16V 1200P	1	
C202	ECBT1C332MR5	16V 3300P	1	
C204	ECBT1H681KB5	50V 680P	1	
C206	ECA1CM101B	16V 100	1	
C207	ECA1CM100B	16V 10	1	
C208	ECBT0J223MS5	6.3V 0.022	1	
C301	ECA1CM101B	16V 100	1	
C302	ECA1AM221B	10V 220	1	
C303	ECA1HM2R2B	50V 2.2	1	
C304	ECQP2A102JZT	100V 1000P	1	
C305	ECA1CM101B	16V 100	1	
C306	ECBT1C822MS5	16V 8200P	1	
C307	ECBT1C103MS5	16V 0.01	1	
C310	ECQP2A151JZT	100V 150P	1	
C311	ECBT1C103MS5	16V 0.01	1	
C403	ECEA1CKA100B	16V 10	1	
C404	ECA1HM010B	50V 1	1	
C405	ECBT1H101KB5	50V 100P	1	
C406	ECEA1HKA010B	50V 1	1	
C407	ECA1HMR22B	50V 0.22	1	
C409	ECA1CM100B	16V 10	1	
C410	ECBT1H101KB5	50V 100P	1	
C412,13	ECFR1C683MR	16V 0.068	2	
C414,15	ECA1HM2R2B	50V 2.2	2	
C416	ECBT1H471KB5	50V 470P	1	
C418	ECA1CM101B	16V 100	1	
C419	ECQV1H224JZ3	50V 0.22	1	
C420	ECA1CM101B	16V 100	1	
C421	ECA1CM471B	16V 470	1	
C423	ECA1CM100B	16V 10	1	
C424	ECA1HM2R2B	50V 2.2	1	
C425	ECBT0J153MS5	6.3V 0.015	1	
C450	ECBT0J223MS5	6.3V 0.022	1	
C503	ECEA1CKA100B	16V 10	1	
C504	ECA1HM010B	50V 1	1	
C505	ECBT1H101KB5	50V 100P	1	
C506	ECA1HM010B	50V 1	1	
C507	ECA1HMR22B	50V 0.22	1	
C509	ECEA1CKA100B	16V 10	1	
C510	ECBT1H101KB5	50V 100P	1	
C512,13	ECFR1C683MR	16V 0.068	2	
C514,15	ECA1HM2R2B	50V 2.2	2	
C516	ECBT1H471KB5	50V 470P	1	
C518	ECA1CM101B	16V 100	1	
C519	ECQV1H224JZ3	50V 0.22	1	
C520	ECA1CM101B	16V 100	1	
C521	ECA1CM471B	16V 470	1	
C523	ECA1CM100B	16V 10	1	
C524	ECA1HM2R2B	50V 2.2	1	
C525	ECBT0J153MS5	6.3V 0.015	1	
C550	ECBT0J223MS5	6.3V 0.022	1	
C601	ECBT1H561KB5	50V 560P	1	
C603	ECA1HM010B	50V 1	1	
C605	ECA1HM010B	50V 1	1	
C606	ECBT1H561KB5	50V 560P	1	
C607	ECBT1H101KB5	50V 100P	1	
C609	ECBT1H101KB5	50V 100P	1	
C615	ECBT1H180JC5	50V 18P	1	
C616	ECBT1H220JC5	50V 22P	1	
C617-19	ECBT1H102KB5	50V 1000P	3	
C620	ECBT1H820KB5	50V 82P	1	
C621	ECBT1H101KB5	50V 100P	1	
C622	ECBT1H102KB5	50V 1000P	1	
C623	ECA1CM101B	16V 100	1	
C624	ECBT1H680J5	50V 68P	1	
C625	ECBT1H820KB5	50V 82P	1	
C627	ECA1CM220B	16V 20	1	
C628,29	ECA1CM101B	16V 100	2	
C630	ECA1CM220B	16V 20	1	
C632	ECA1CM101B	16V 100	1	
C633	ECA1CM100B	16V 10	1	
C637	ECA1CM331B	16V 330	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C638	ECA1HM8R47B	50V 0.47	1	
C640	ECA1CM220B	16V 20	1	
C641,42	ECA1CM101B	16V 100	2	
C643	ECA1CM220B	16V 20	1	
C644	ECA1CM100B	16V 10	1	
C645	ECA1VM221B	35V 220	1	
C646	ECBT1H330J5	50V 33P	1	
C648	ECBT1H330J5	50V 33P	1	
C650	ECBT1H330J5	50V 33P	1	
C653	ECA1HM100B	50V 10	1	
C654	ECBT1H102KB5	50V 1000P	1	
C655	ECBT1C103MS5	16V 0.01	1	
⚠ C657	ECA1EM222E	25V 2200	1	
C701	ECEA0JKA330I	6.3V 33	1	
C702	ECUZ1E104MBN	25V 0.1	1	
C703	ECEA0JKA101I	6.3V 100	1	
C704	ECUZ1E104MBN	25V 0.1	1	
C706	ECUZ1H272KBN	50V 2700P	1	
C707	ECUZ1E273KBN	25V 0.027	1	
C710	ECUV1H151KCN	50V 150P	1	
C711,12	ECUZ1E104ZFN	25V 0.1	2	
C713	ECUZ1E104MBN	25V 0.1	1	
C714	ECEA0JKA101I	6.3V 100	1	
C715	ECUZ1H182KBN	50V 1800P	1	
C716	ECUZ1H821KBN	50V 820P	1	
C717	ECUZ1E104ZFN	25V 0.1	1	
C718	ECUZ1C224KBN	16V 0.22	1	
C721,22	ECUZ1H150JCN	50V 15P	2	
C723	ECEA1AKA221I	10V 220	1	
C724	ECUZ1E104MBN	25V 0.1	1	
C725,26	ECUZ1H102KBN	50V 1000P	2	
C727,28	ECA1HAK010XI	50V 1	2	
C730	ECUZ1E104ZFN	25V 0.1	1	
C731,32	ECEA0JKA221I	6.3V 220	2	
C733	ECUZ1E104MBN	25V 0.1	1	
C734	ECEA1AKA221I	10V 220	1	
C735-37	ECUZ1E104ZFN	25V 0.1	3	
C738	ECUZ1E104MBN	25V 0.1	1	
C739	ECUZ1H103KBN	50V 0.01	1	
C742	ECUZ1E273KBN	25V 0.027	1	
C743	ECUZ1E104ZFN	25V 0.1	1	
C744	ECUZ1E123KBN	25V 0.012	1	
C745	ECUZ1C473KBN	16V 0.047	1	
C747	ECUV1H221KBN	50V 220P	1	
C749	ECUZ1H222KBN	50V 2200P	1	
C750,51	ECUZ1E104MBN	25V 0.1	2	
C752	ECUZ1H102KBN	50V 1000P	1	
C753	ECUZ1H471KBN	50V 470P	1	
C754	ECUZ1H471KBN	50V 470P	1	
C761,62	ECUZ1H471KBN	50V 470P	2	
C851	ECBT1H101KB5	50V 100P	1	
C852	ECBT1H100JC5	50V 10P	1	
C854	ECBT1H102KB5	50V 1000P	1	
C860	ECBT1H101KB5	50V 100P	1	
C901-04	ECKR1H103ZF5	50V 0.01	4	
CF1	RLFFETNL02AL	CERAMIC FILTER	1	
CF3	RLFDFT20AL	CERAMIC FILTER	1	
CN701	RJS2A6016	CONNECTOR(16P)	1	
CN702	RJS1A6723-1Q	CONNECTOR(23P)	1	
CN702A	RJS1A6823-J	CONNECTOR(23P)	1	
CP301	RJP4G18ZA	SOCKET(4P)	1	
CP603	RJP3G9YA	SOCKET(3P)	1	
CP604	RJP4G4YA	SOCKET(4P)	1	
CP608	RJT029W002-1	SOCKET(2P)	1	
CT1	ECRLA010A53R	TRIMMER CAPACITOR	1	
D1	SVC346T-AA	DIODE	1	
D2,D3	KV13G0HTH	DIODE	2	
D601,02	RVD1SS133TA	DIODE	2	
D607,08	RVD1SS133TA	DIODE	2	
D609	MTZJ5R1BTA	DIODE	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D611	RVD1SS133TA	DIODE	1	
D613	RVD1SS133TA	DIODE	1	
⚠ D614	MTZJ7R5CTA	DIODE	1	
⚠ D615	MTZJ15BTA	DIODE	1	
⚠ D617	MTZJ5R6CTA	DIODE	1	
D618-20	RVD1SS133TA	DIODE	3	
D625	RB441QT-77	DIODE	1	
D801	SPR325MWWT31	LED	1	
⚠ D901-04	1SR35400V	DIODE	4	
D905	RVD1SS133TA	DIODE	1	
⚠ F901	XBA2C20TB0L	FUSE,250V T2A	1	
FH901,02	RJR0169T	FUSE HOLDER	2	
⚠ FP601	RSFMB10KT-L	FUSE PROTECTOR	1	
⚠ FP901	RSFMB50KT-L	FUSE PROTECTOR	1	
H601A	RJS2A1307	CABLE HOLDER(7P)	1	
H601B	RJS2A1307	CABLE HOLDER(7P)	1	
H604	RJS1A5504	CABLE HOLDER(4P)	1	
IC1	TA2008AN	IC	1	
IC2	LC72131-D	IC	1	
IC301	BA3313L	IC	1	
IC601	M38224MGM056	IC	1	
IC602	BMR0301C	IC	1	
IC603	LA4227	IC	1	
IC604	M62429P	IC	1	
⚠ IC605	S81250SGY-Z	IC	1	
IC606	BU4066BC	IC	1	
IC701	AN8837SBE1	IC	1	
IC702	MN662746RPK1	IC	1	
IC703	AN8780NSBE2	IC	1	
JK601	RJJ37TK01-1C	JK,HEADPHONE	1	
⚠ JK901	RJJ1SE01-1H	JK,AC INLET(S901)	1	
L2	RLQY30S1W	COIL,CHOKE	1	
L3	RLV2C030-0	COIL,ANTENNA	1	
L4	RLD4Y45W	COIL,CHOKE	1	
L6	RL02B130-T	COIL,OSC	1	
L7	RLQZP101KT-Y	COIL,CHOKE	1	
L8	RLQY30S1W	COIL,CHOKE	1	
L301	RL09B17-T	COIL,CHOKE	1	
L401	RLL500050T-Y	COIL,CHOKE	1	
L501	RLL500050T-Y	COIL,CHOKE	1	
L601	RLQZP1R0KT-Y	COIL,CHOKE	1	
L605	RLQZP1R0KT-Y	COIL,CHOKE	1	
L612-14	RLQZP1R0KT-Y	COIL,CHOKE	3	
L617	RLQZP1R0KT-Y	COIL,CHOKE	1	
L623	RLL500050T-Y	COIL,CHOKE	1	
L626	RLQZP2R2KT-Y	COIL,CHOKE	1	
⚠ L901,02	RLL500050T-Y	COIL,CHOKE	2	
P1	RPG3774	GIFT BOX	1	(EB,EG)
P1	RPG3775	GIFT BOX	1	(E)
P2	RPH0131	MIRAMAT SHEET	1	
P3	RPN1111	CUSHION	1	
P4	RPQX0073	PAD	1	
Q1	2SC1740SRTA	TRANSISTOR	1	
Q301,02	2SC1740SRTA	TRANSISTOR	2	
Q401,02	2SC1740SRTA	TRANSISTOR	2	
Q404,05	2SC1740SLNRT	TRANSISTOR	2	
Q406	2SC1740SRTA	TRANSISTOR	1	
Q409	2SC1740SRTA	TRANSISTOR	1	
Q411	RVTDTC114TST	TRANSISTOR	1	
Q501,02	2SC1740SRTA	TRANSISTOR	2	
Q504,05	2SC1740SLNRT	TRANSISTOR	2	
Q506	2SC1740SRTA	TRANSISTOR	1	
Q509	2SC1740SRTA	TRANSISTOR	1	
Q511	RVTDTC114TST	TRANSISTOR	1	
Q601	RVTDTA114EST	TRANSISTOR	1	
Q603-05	2SC1740SRTA	TRANSISTOR	3	

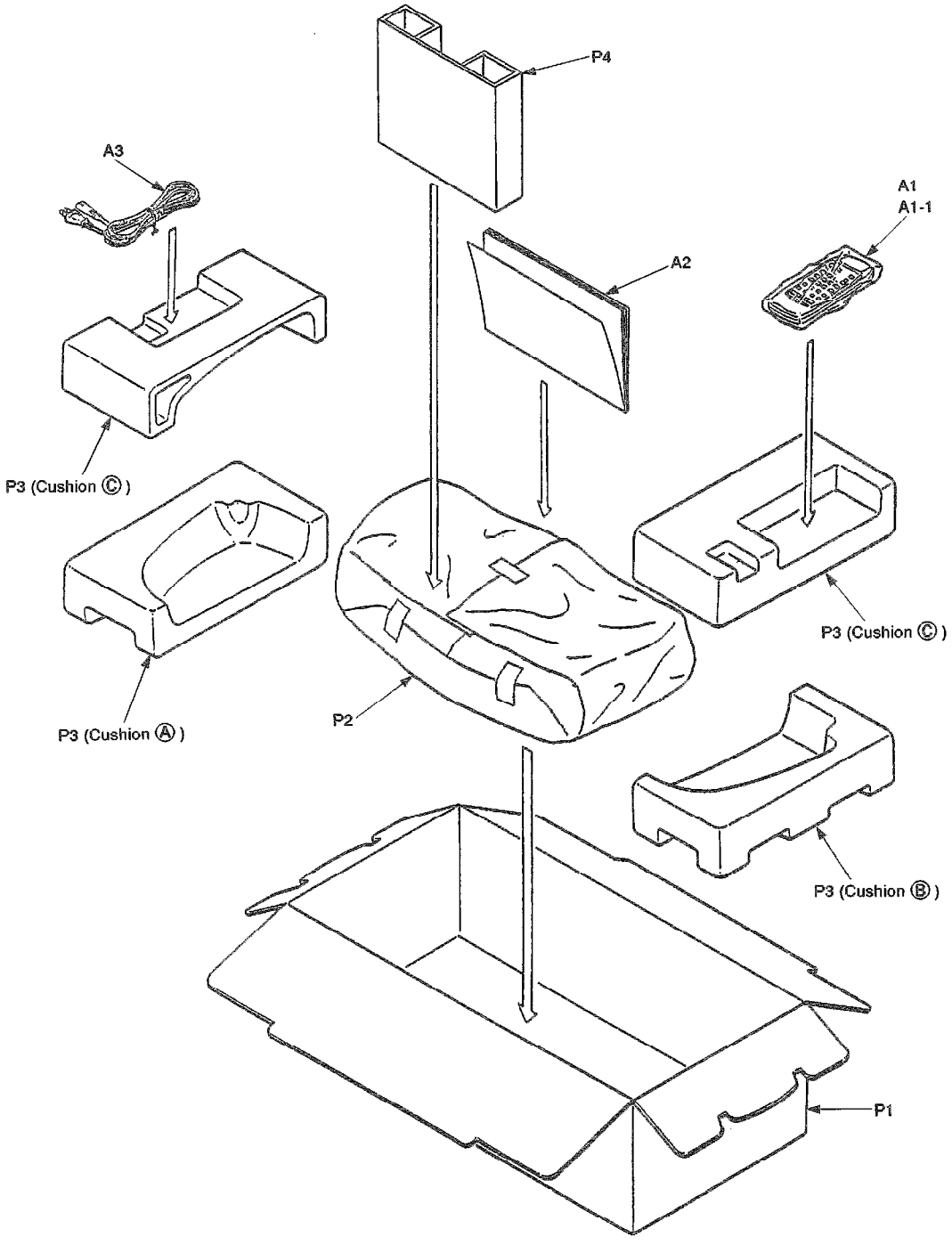
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
Q606	RVTDTC144EST	TRANSISTOR	1	
Q607	2SC1740SRTA	TRANSISTOR	1	
Q608	2SA952LTA	TRANSISTOR	1	
Q609,10	2SC1740SRTA	TRANSISTOR	2	
Q611	RVTD1A114EST	TRANSISTOR	1	
Q612	2SC1740SRTA	TRANSISTOR	1	
Q613	2SJ40CTA	TRANSISTOR	1	
⚠ Q614	2SB1566E	TRANSISTOR	1	
Q615	2SC1740SRTA	TRANSISTOR	1	
Q616	RVTDTC144EST	TRANSISTOR	1	
Q617	2SA952LTA	TRANSISTOR	1	
Q618	RVTDTC143XST	TRANSISTOR	1	
Q621,22	2SC1740SRTA	TRANSISTOR	2	
Q623,24	RVTDTC144EST	TRANSISTOR	2	
Q701	2SA1037AKSTX	TRANSISTOR	1	
Q702	DTC114YKA146	TRANSISTOR	1	
R2	ERDS2TJ103T	1/4W 10K	1	
R3	ERDS2TJ332T	1/4W 3.3K	1	
R4	ERDS2TJ472T	1/4W 4.7K	1	
R5	ERDS2TJ221T	1/4W 220	1	
R6	ERDS2TJ104T	1/4W 100K	1	
R8,R9	ERDS2TJ104T	1/4W 100K	2	
R11	ERDS2TJ223T	1/4W 22K	1	
R12	ERDS2TJ103T	1/4W 10K	1	
R16	ERDS2TJ104T	1/4W 100K	1	
R17	ERDS2TJ222T	1/4W 2.2K	1	
R20	ERDS2TJ223T	1/4W 22K	1	
R21	ERDS2TJ473T	1/4W 47K	1	
R22	ERDS2TJ102T	1/4W 1K	1	
R23	ERDS2TJ223T	1/4W 22K	1	
R24	ERDS2TJ103T	1/4W 10K	1	
R25	ERDS2TJ223T	1/4W 22K	1	
R26	ERDS2TJ103T	1/4W 10K	1	
R27	ERDS2TJ332T	1/4W 3.3K	1	
R28	ERDS2TJ223T	1/4W 22K	1	
R29	ERDS2TJ103T	1/4W 10K	1	
R30	ERDS2TJ472T	1/4W 4.7K	1	
R31	ERDS2TJ222T	1/4W 2.2K	1	
R32	ERDS2TJ471T	1/4W 470	1	
R91	ERDS2TJ330T	1/4W 33	1	
R92	ERDS2TJ223T	1/4W 22K	1	
R101	ERDS2TJ183T	1/4W 18K	1	
R102	ERDS2TJ272T	1/4W 2.7K	1	
R104	ERDS2TJ274T	1/4W 270K	1	
R105	ERDS2TJ680T	1/4W 68	1	
R106	ERDS2TJ222T	1/4W 2.2K	1	
R107	ERDS2TJ682T	1/4W 6.8K	1	
R108	ERDS2TJ472T	1/4W 4.7K	1	
R201	ERDS2TJ183T	1/4W 18K	1	
R202	ERDS2TJ272T	1/4W 2.7K	1	
R204	ERDS2TJ274T	1/4W 270K	1	
R205	ERDS2TJ680T	1/4W 68	1	
R206	ERDS2TJ222T	1/4W 2.2K	1	
R207	ERDS2TJ682T	1/4W 6.8K	1	
R208	ERDS2TJ472T	1/4W 4.7K	1	
R301	ERDS2TJ223T	1/4W 22K	1	
R302	ERDS2TJ101T	1/4W 100	1	
R303	ERDS2FJ751	1/4W 750	1	
R304	ERDS2TJ563T	1/4W 56K	1	
R305	ERDS2TJ221T	1/4W 220	1	
R306	ERDS2TJ100T	1/4W 10	1	
R307	ERDS2TJ272T	1/4W 2.7K	1	
R401	ERDS2TJ103T	1/4W 10K	1	
R402	ERDS2TJ683T	1/4W 68K	1	
R403	ERDS2TJ562T	1/4W 5.6K	1	
R404	ERDS2TJ682T	1/4W 6.8K	1	
R409	ERDS2TJ472T	1/4W 4.7K	1	
R410	ERDS2TJ152T	1/4W 1.5K	1	
R411	ERDS2TJ474T	1/4W 470K	1	
R412	ERDS2TJ392T	1/4W 3.9K	1	
R413	ERDS2TJ681T	1/4W 680	1	
R415	ERDS2TJ222T	1/4W 2.2K	1	
R416	ERDS2TJ473T	1/4W 47K	1	
R417	ERDS2TJ105T	1/4W 1M	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R418	ERDS2TJ103T	1/4W 10K	1	
R419	ERDS2TJ822T	1/4W 8.2K	1	
R421	ERDS2TJ102T	1/4W 1K	1	
R422	ERDS2TJ683T	1/4W 68K	1	
R423	ERDS2TJ682T	1/4W 6.8K	1	
R424	ERDS2TJ153T	1/4W 15K	1	
R425	ERDS2TJ103T	1/4W 10K	1	
R426	ERDS2TJ470T	1/4W 47	1	
R427	ERDS2TJ181T	1/4W 180	1	
R430	ERDS2TJ221T	1/4W 220	1	
R431	ERDS2TJ472T	1/4W 4.7K	1	
R436	ERDS2TJ103T	1/4W 10K	1	
R450	ERDS2TJ102T	1/4W 1K	1	
R501	ERDS2TJ103T	1/4W 10K	1	
R502	ERDS2TJ683T	1/4W 68K	1	
R503	ERDS2TJ562T	1/4W 5.6K	1	
R504	ERDS2TJ682T	1/4W 6.8K	1	
R509	ERDS2TJ472T	1/4W 4.7K	1	
R510	ERDS2TJ152T	1/4W 1.5K	1	
R511	ERDS2TJ474T	1/4W 470K	1	
R512	ERDS2TJ392T	1/4W 3.9K	1	
R513	ERDS2TJ681T	1/4W 680	1	
R515	ERDS2TJ222T	1/4W 2.2K	1	
R516	ERDS2TJ473T	1/4W 47K	1	
R517	ERDS2TJ105T	1/4W 1M	1	
R518	ERDS2TJ103T	1/4W 10K	1	
R519	ERDS2TJ822T	1/4W 8.2K	1	
R521	ERDS2TJ102T	1/4W 1K	1	
R522	ERDS2TJ683T	1/4W 68K	1	
R523	ERDS2TJ682T	1/4W 6.8K	1	
R524	ERDS2TJ153T	1/4W 15K	1	
R525	ERDS2TJ103T	1/4W 10K	1	
R526	ERDS2TJ470T	1/4W 47	1	
R527	ERDS2TJ181T	1/4W 180	1	
R530	ERDS2TJ221T	1/4W 220	1	
R531	ERDS2TJ472T	1/4W 4.7K	1	
R536	ERDS2TJ103T	1/4W 10K	1	
R550	ERDS2TJ102T	1/4W 1K	1	
R604-06	ERDS2TJ153T	1/4W 15K	3	
R607	ERDS2TJ104T	1/4W 100K	1	
R608	ERDS2TJ334T	1/4W 330K	1	
R609	ERDS2TJ153T	1/4W 15K	1	
R610	ERDS2TJ152T	1/4W 1.5K	1	
R611	ERDS2TJ223T	1/4W 22K	1	
R613	ERDS2TJ333T	1/4W 33K	1	
R614,15	ERDS2TJ104T	1/4W 100K	2	
R617	ERDS2TJ104T	1/4W 100K	1	
R624,25	ERDS2TJ472T	1/4W 4.7K	2	
R626	ERDS2TJ106T	1/4W 10M	1	
R627	ERDS2TJ334T	1/4W 330K	1	
R628	ERDS2TJ105T	1/4W 1M	1	
R630	ERDS2TJ334T	1/4W 330K	1	
R636	ERDS2TJ102T	1/4W 1K	1	
R638,39	ERDS2TJ102T	1/4W 1K	2	
R640,41	ERDS2TJ103T	1/4W 10K	2	
R642	ERDS2TJ223T	1/4W 22K	1	
R643	ERDS2TJ224T	1/4W 220K	1	
R644	ERDS2TJ223T	1/4W 22K	1	
R646	ERDS2TJ101T	1/4W 100	1	
R648	ERDS2TJ221T	1/4W 220	1	
R649	ERDS2TJ223T	1/4W 22K	1	
R650	ERDS2TJ182T	1/4W 1.8K	1	
R651	ERDS2TJ223T	1/4W 22K	1	
R653	ERDS2TJ182T	1/4W 1.8K	1	
R654	ERDS2TJ332T	1/4W 3.3K	1	
R655	ERDS2TJ391T	1/4W 390	1	
R656	ERDS2TJ473T	1/4W 47K	1	
R658	ERDS2TJ473T	1/4W 47K	1	
R660	ERDS2TJ151T	1/4W 150	1	
R661	ERDS2TJ181T	1/4W 180	1	
R662	ERDS2TJ103T	1/4W 10K	1	
R663	ERDS2TJ122T	1/4W 1.2K	1	
R665	ERDS2TJ222T	1/4W 2.2K	1	
R666	ERDS2TJ472T	1/4W 4.7K	1	
R667	ERDS2TJ104T	1/4W 100K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R668	ERDS2TJ103T	1/4W 10K	1	
R669	ERDS2TJ123T	1/4W 12K	1	
⚠ R670	ERDS1FVJ1R0T	1/2W 1	1	
R671	ERDS2TJ151T	1/4W 150	1	
R672	ERDS2TJ124T	1/4W 120K	1	
R673	ERDS2TJ105T	1/4W 1M	1	
R674	ERDS2TJ151T	1/4W 150	1	
R675	ERDS2TJ181T	1/4W 180	1	
R676	ERDS2TJ335T	1/4W 3.3M	1	
R677	ERDS2TJ682T	1/4W 6.8K	1	
R678	ERDS2TJ103T	1/4W 10K	1	
R679	ERDS2TJ153T	1/4W 15K	1	
R680	ERDS2TJ103T	1/4W 10K	1	
R681	ERDS2TJ223T	1/4W 22K	1	
R682	ERDS2TJ681T	1/4W 680	1	
R683	ERDS2TJ223T	1/4W 22K	1	
R684	ERDS2TJ122T	1/4W 1.2K	1	
R685,86	ERDS2TJ472T	1/4W 4.7K	2	
R687	ERDS2TJ103T	1/4W 10K	1	
R688	ERDS2TJ333T	1/4W 33K	1	
R689	ERD2FCVG101T	1/4W 100	1	
R690,91	ERDS2TJ1R5T	1/4W 1.5	2	
R693	ERDS2TJ472T	1/4W 4.7K	1	
R694	ERDS2TJ121T	1/4W 120	1	
R695	ERDS2TJ471T	1/4W 470	1	
R696	ERDS2TJ101T	1/4W 100	1	
R698	ERDS2TJ152T	1/4W 1.5K	1	
R699	ERDS2TJ562T	1/4W 5.6K	1	
R701	ERJ6GEYJ4R7A	1/10W 4.7	1	
R702	ERJ6GEYJ822A	1/10W 8.2K	1	
R704	ERJ6GEYJ102A	1/10W 1K	1	
R705	ERJ6GEYJ124A	1/10W 120K	1	
R706	ERJ6GEYJ102A	1/10W 1K	1	
R707	ERJ6GEYJ474A	1/10W 470K	1	
R708	ERJ6GEYJ154A	1/10W 150K	1	
R709	ERJ6GEYJ473A	1/10W 47K	1	
R710	ERJ6GEYJ103A	1/10W 10K	1	
R711	ERJ6GEYJ154A	1/10W 150K	1	
R712	ERJ6GEYJ221A	1/10W 220	1	
R715	ERJ6GEYJ122A	1/10W 1.2K	1	
R717-20	ERJ6GEYJ102A	1/10W 1K	4	
R721	ERJ6GEYJ101A	1/10W 100	1	
R723	ERJ6GEYJ272A	1/10W 2.7K	1	
R724	ERJ6GEYJ333A	1/10W 33K	1	
R725	ERJ6GEYJ122A	1/10W 1.2K	1	
R727,28	ERJ6GEYJ682A	1/10W 6.8K	2	
R729	ERJ6GEYJ562A	1/10W 5.6K	1	
R731	ERJ6GEYJ123A	1/10W 12K	1	
R734-36	ERJ6GEYJ101A	1/10W 100	3	
R738	ERJ6GEYJ223A	1/10W 22K	1	
R741-43	ERJ6GEYJ562A	1/10W 5.6K	3	
R744	ERJ6GEYJ104A	1/10W 100K	1	
R745	ERJ6GEYJ155A	1/10W 1.5M	1	
R748	ERJ6GEYJ272A	1/10W 2.7K	1	
R749	ERJ6GEYJ682A	1/10W 6.8K	1	
R752	ERJ8GEYJ220A	1/8W 22	1	
R770	ERJ6GEYJ224A	1/10W 220K	1	
R801	ERDS2TJ152T	1/4W 1.5K	1	
R802	ERDS2TJ222T	1/4W 2.2K	1	
R803	ERDS2TJ272T	1/4W 2.7K	1	
R804	ERDS2TJ392T	1/4W 3.9K	1	
R805	ERDS2TJ562T	1/4W 5.6K	1	
R806	ERDS2TJ822T	1/4W 8.2K	1	
R807	ERDS2TJ153T	1/4W 15K	1	
R808	ERDS2TJ333T	1/4W 33K	1	
R809	ERDS2TJ823T	1/4W 82K	1	
R851	ERDS2TJ153T	1/4W 15K	1	
R853	ERDS2TJ472T	1/4W 4.7K	1	
R857	ERDS2TJ103T	1/4W 10K	1	
R901	ERDS2TJ271T	1/4W 270	1	
R902	ERDS2TJ683T	1/4W 68K	1	
R903	ERDS2TJ272T	1/4W 2.7K	1	
RJ701	ERJ6GEY0R00A	1/10W 0	1	
RJ702-10	ERJ8GEY0R00A	1/8W 0	9	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
RJ721-28	ERJ6GEY0R00A	1/10W 0	8	
RJ750	ERJ6GEY0R00A	1/10W 0	1	
S301	RSP2F002-A	SW, R/P	1	
S601	RSH1A006-U	SW, MOTOR	1	
S602	RSH1A005	SW, CD COVER CLOSE	1	
S701	RSH1A043-U	SW, REST	1	
S801-12	EVQ21405R	SW	12	
⚠ S901	RJJ1SE01-1H	SW, AC INLET (JK901)	1	
T1	RLI2B014-T	AM IFT	1	
⚠ T901	RTP1K1B009-X	POWER TRANSFORMER	1	
TJ701,02	EYF8CU	TEST JUMPER	2	
X2	RSXZ456KM01	OSCILLATOR	1	
X3	RSXC7M20S04T	OSCILLATOR	1	
X601	RSXD32K7S02	OSCILLATOR	1	
X602	RSXZ4M19D01T	OSCILLATOR	1	
X701	RSXZ16M9M01T	OSCILLATOR	1	
Z601	RSL5196-V	LCD DISPLAY	1	
Z801	RCD12042LN	REMOTE SENSOR	1	

Packaging



P3 : (Cushion Ⓐ, Ⓑ, Ⓒ, Ⓓ) Part No. RPN1111

Printed in Japan
K980307800YH/AM

ORDER NO. MD9812176S2

Service Manual

Supplement

MASH* multi-stage noise shaping

COMPACT disc DIGITAL AUDIO

Portable Stereo CD System

RX-DS19

Colour

(S) . . . Silver Type

- **Please file and use this Supplement Manual together with the Service Manual for the following Model No. (Order No.) :**

  RX-DS 18 E/EB/EG-K MD9803067C2
  RX-DS 19 E/EB/EG-S MD9811165A2

- This Supplement is provided to indicate the addition of changes in Cabinet Parts location to the Service Manual. Please use it to update your Service Manual for future reference.

Area

Suffix for Model No.	Area	Colour
(E)	Europe and Russia	(S)
(EB)	Great Britain	
(EG)	Germany and Italy	

* MASH is a trademark of NTT.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

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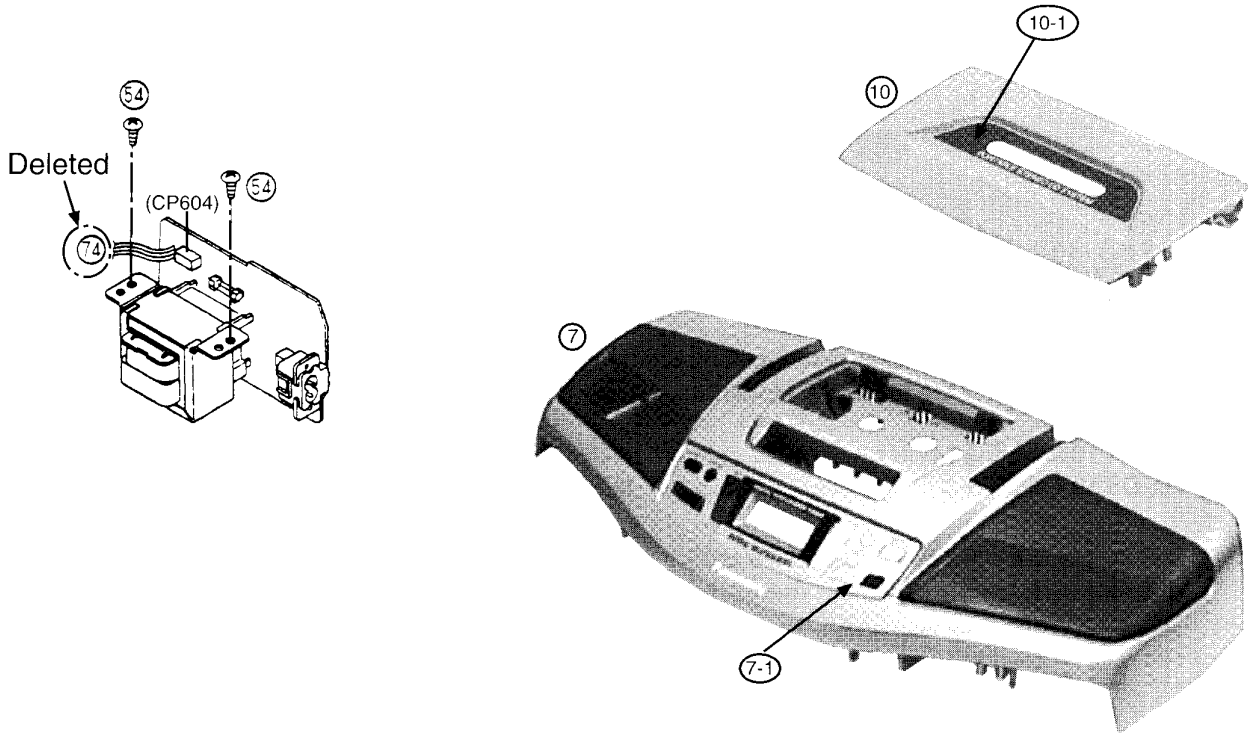
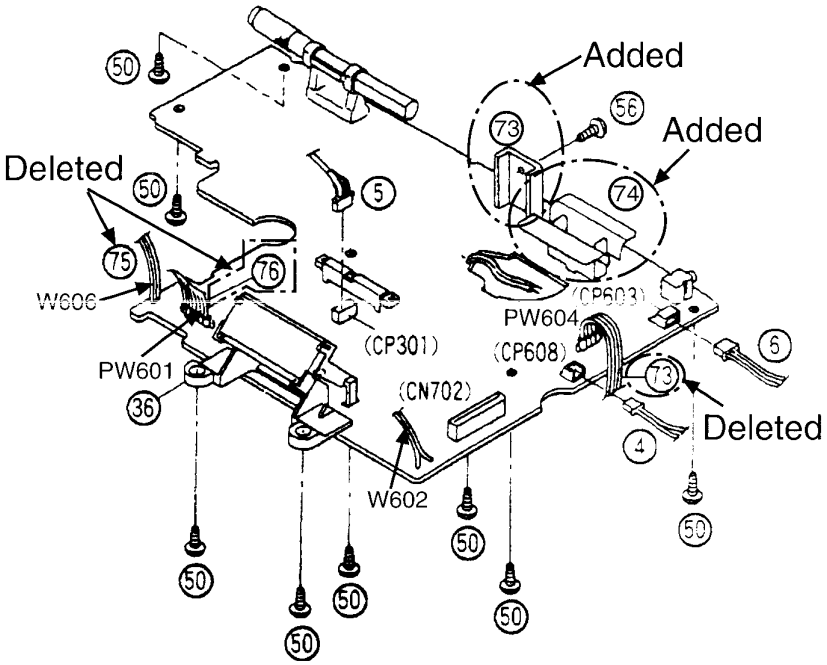
Cabinet Parts Location (Changes shown are compared with the original model RX-DS18 E/EB/EG)





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